

Figure 1

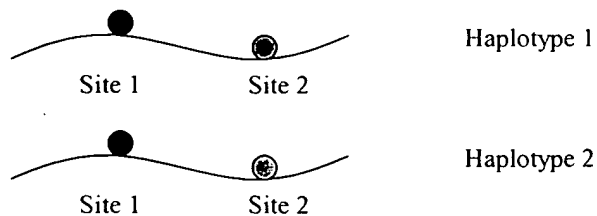


Figure 2



Figure 3

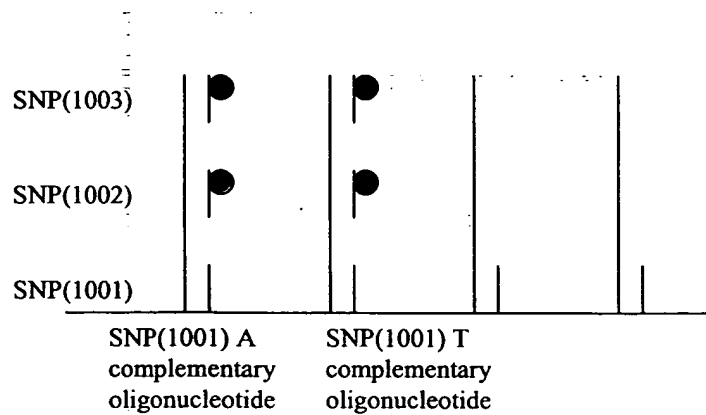


Figure 4

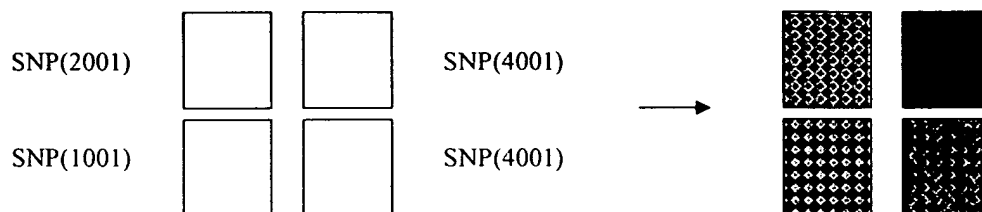


Figure 5

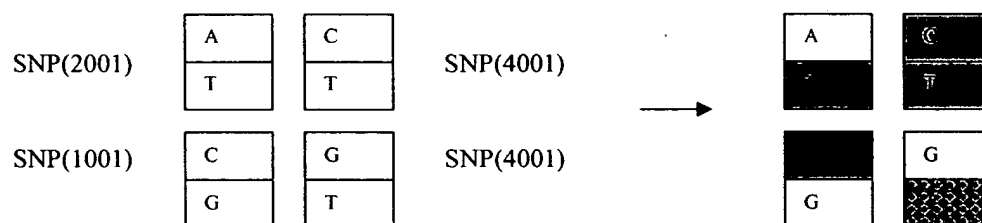


Figure 6

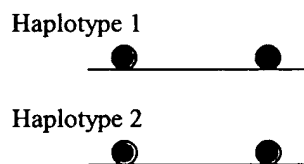


Figure 7

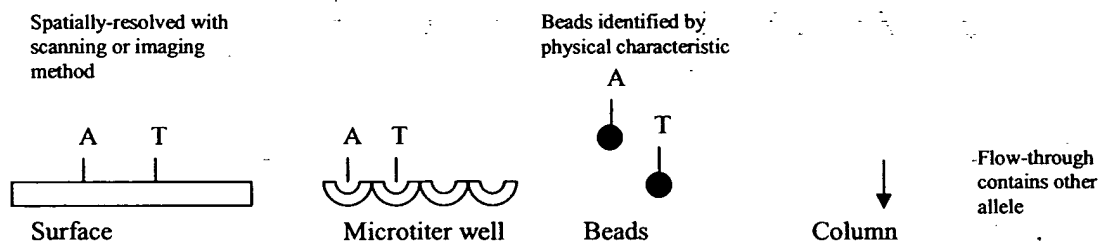


Figure 8

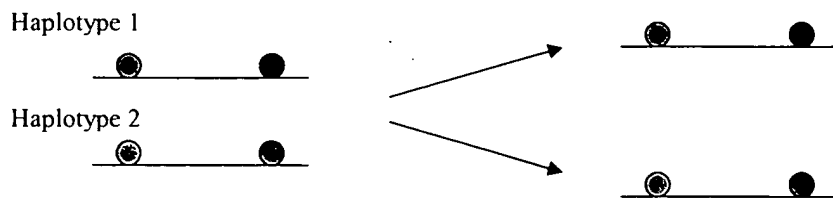


Figure 9

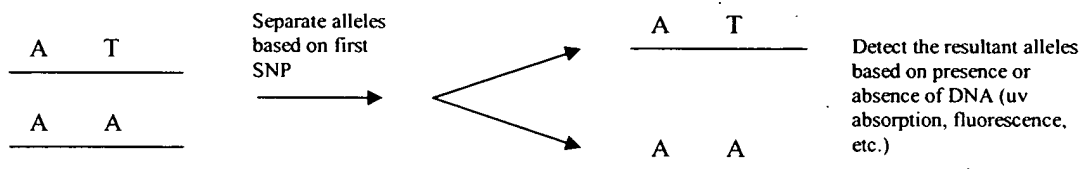


Figure 10

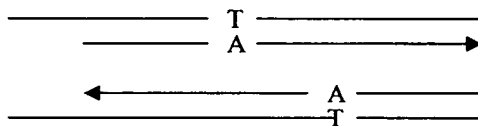
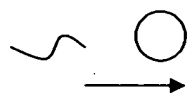
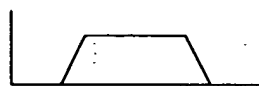
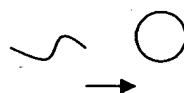
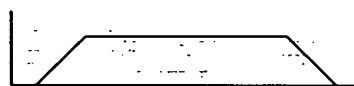


Figure 11



$V = 500$
microns/second

Integrated intensity
= 1000 units
(arbitrary)



$V = 250$
microns/second

Integrated intensity
~ 2000 units
(arbitrary)

Figure 12

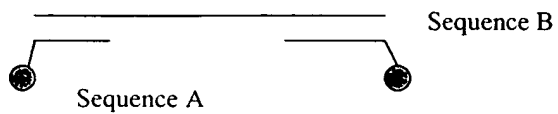


Figure 13

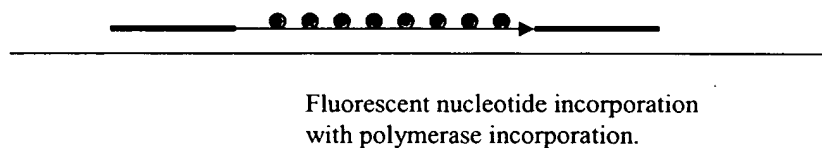


Figure 14

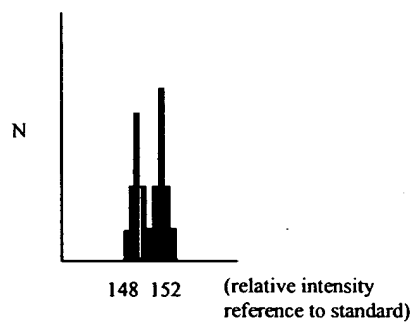


Figure 15

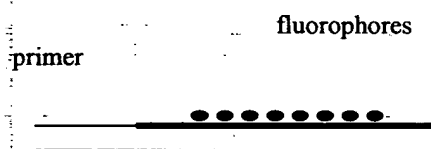


Figure 16

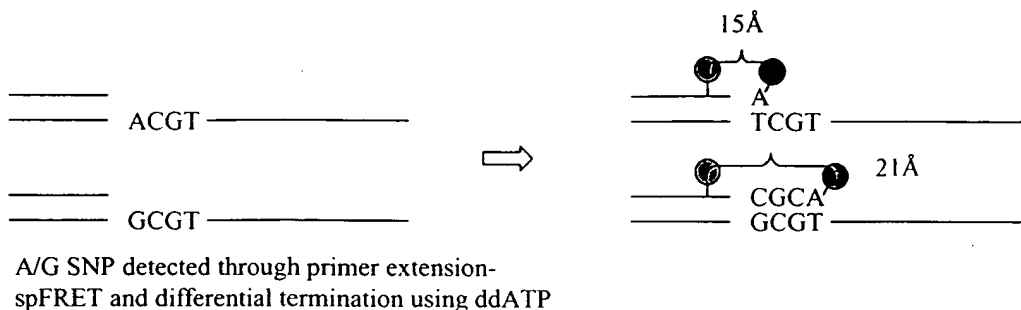


Figure 17

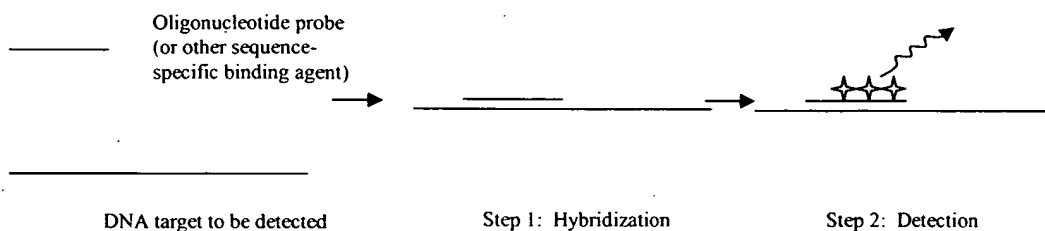


Figure 18

TWO-COLOR PRIMER EXTENSION ASSAY

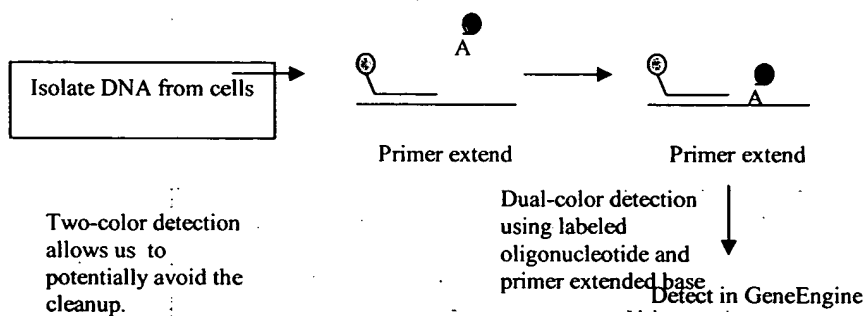


Figure 19

TWO-COLOR EXTENSION AND LIGATION ASSAY

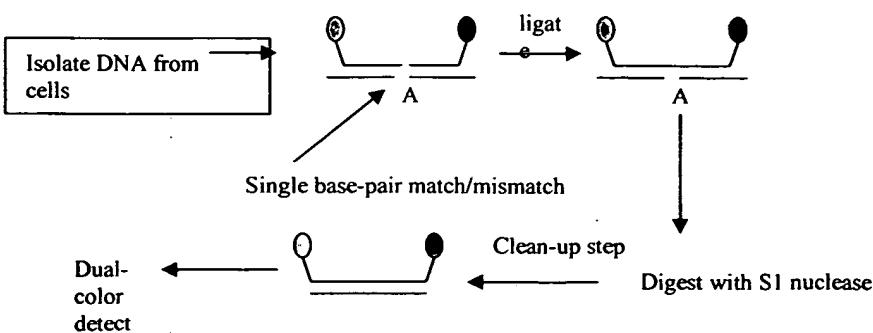


Figure 20

spFRET-BASED ASSAY OR PRIMER EXTENSION ASSAY-BASED CLEAVAGE
OF PRODUCT (LIKE TAQMAN)

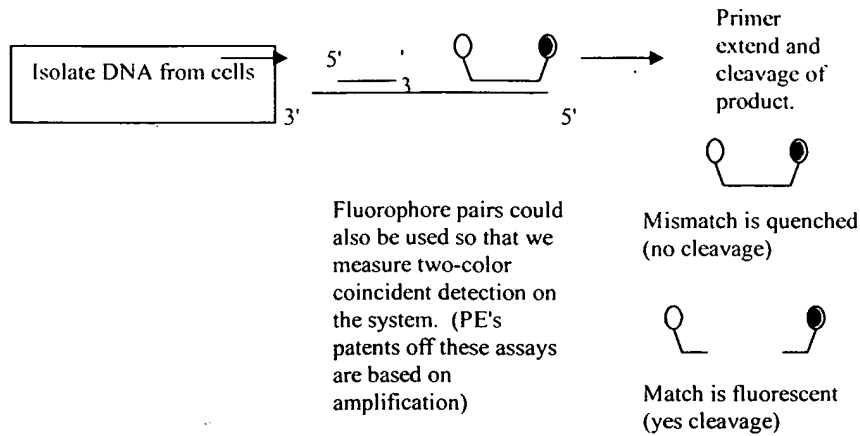


Figure 21

spFRET-BASED ASSAY BASED ON COINCIDENT HYBRIDIZATION

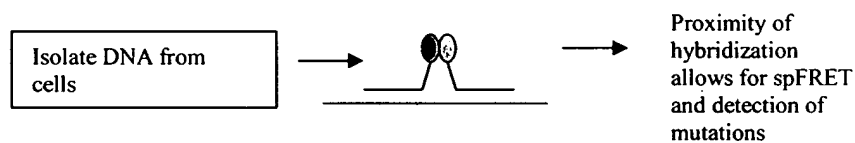


Figure 22

spFRET-BASED ASSAY WITH COMBINATION OF SINGLE-BASE
EXTENSION REACTION

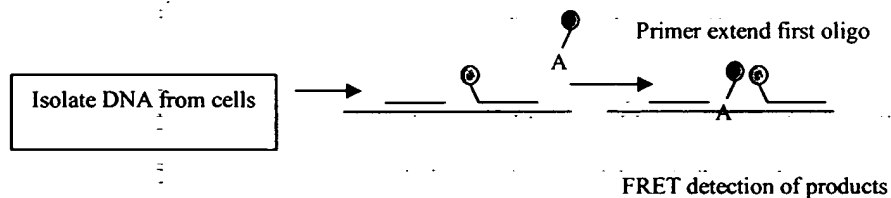


Figure 23

TWO-COLOR DETECTION ASSAY IN COMBINATION WITH PRIMER EXTENSION

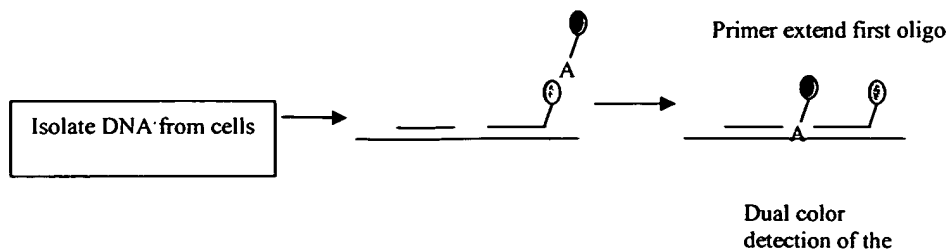


Figure 24

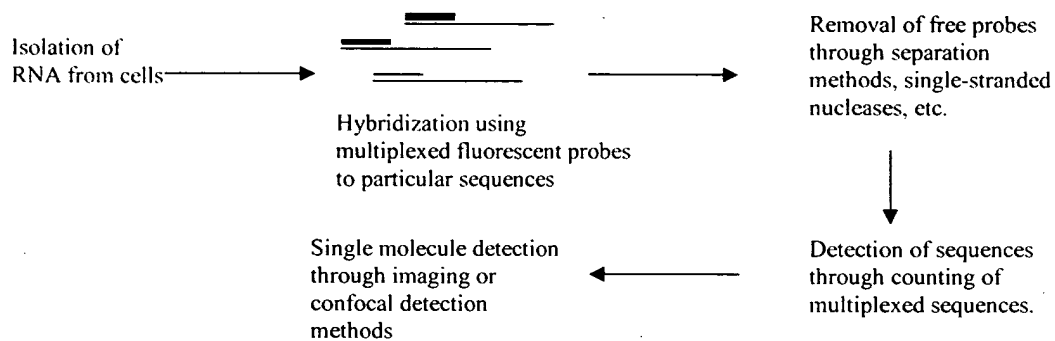


Figure 25

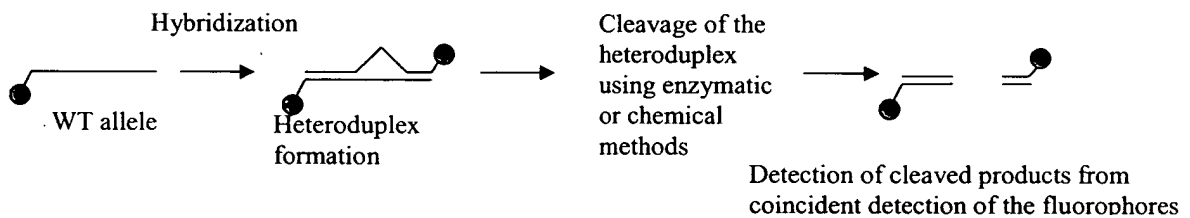


Figure 26



Single Molecule Fluorescent Tagging and Coincident Counting of Molecules

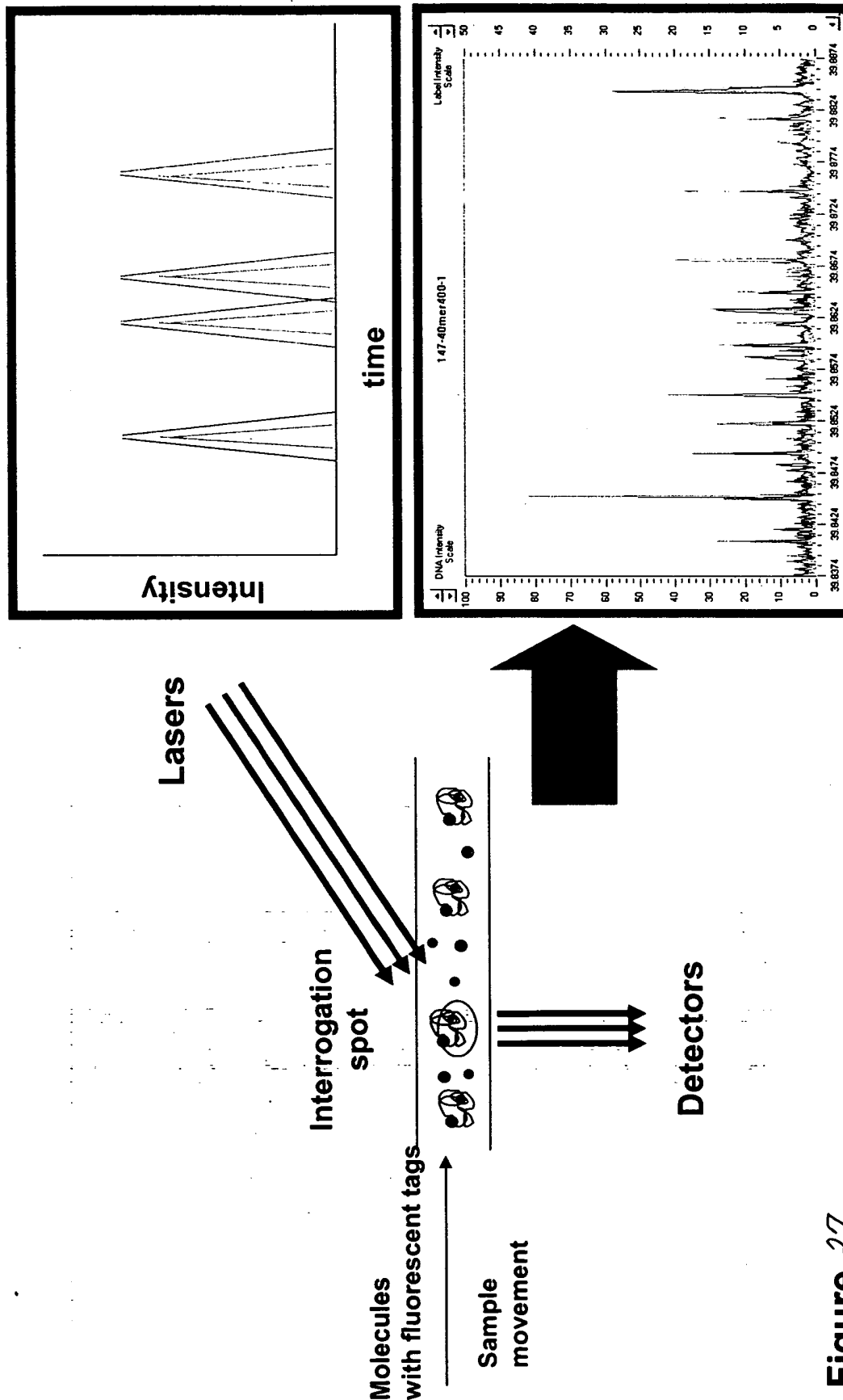


Figure 27.

Titration of Dual Labeled Oligonucleotide

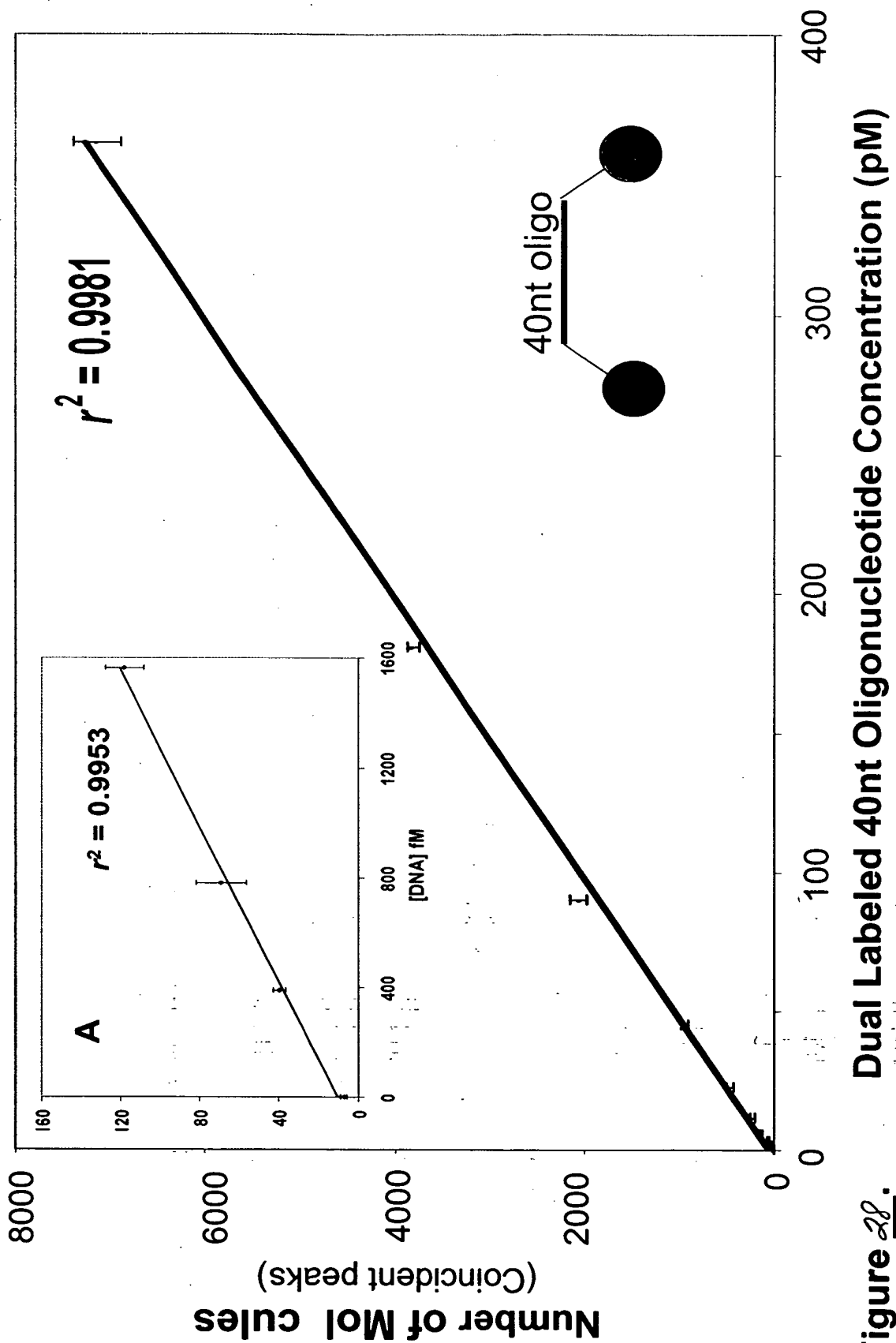


Figure 28.

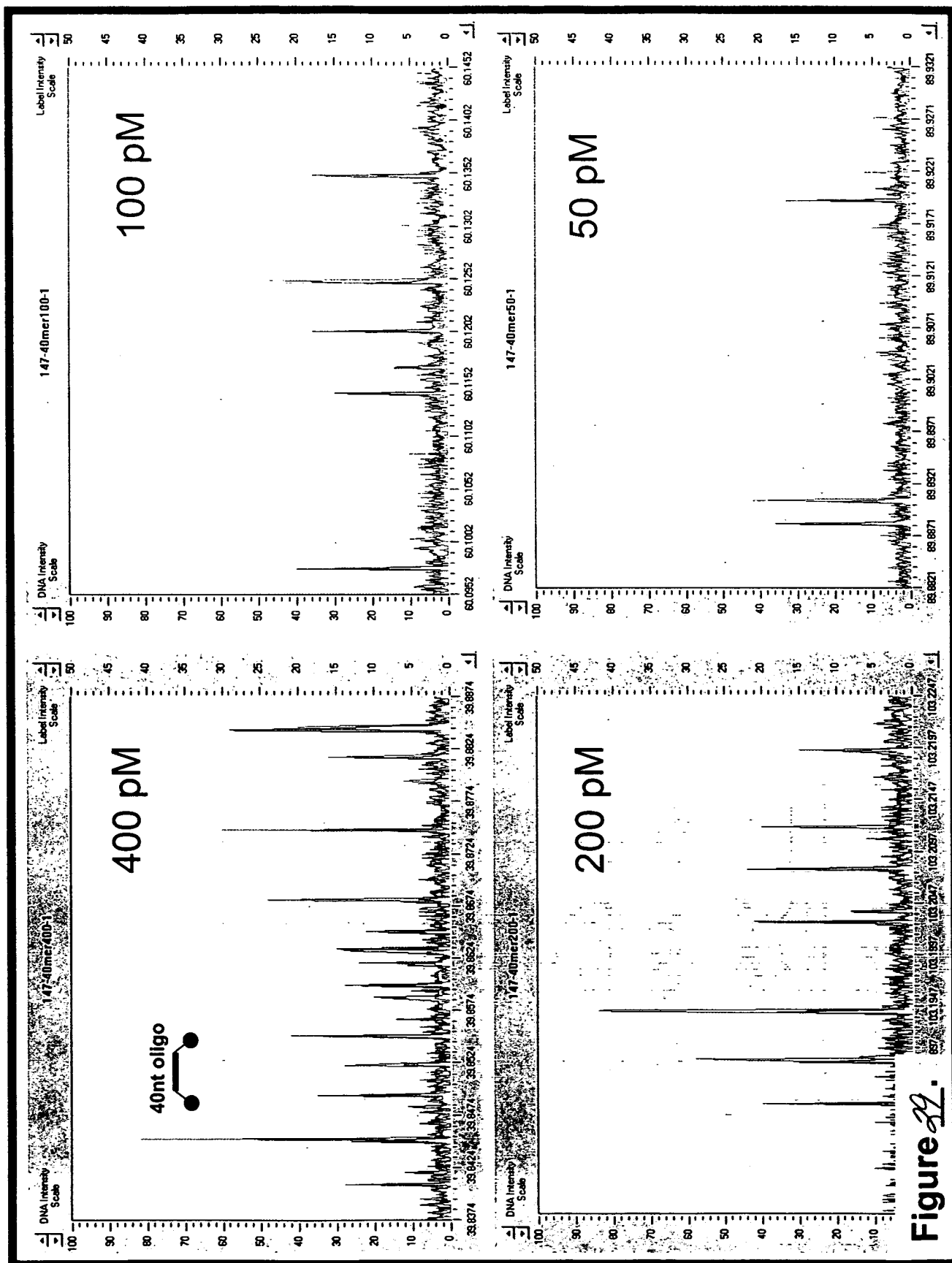


Figure 22.

Two Assays Validated

- Dual Probe Hybridization: Hybridize two oligos (20 - 30 nt) to RNA target
- Probe Extension: Hybridize one Cy5 labeled oligo and incorporate TAMRA by reverse transcription

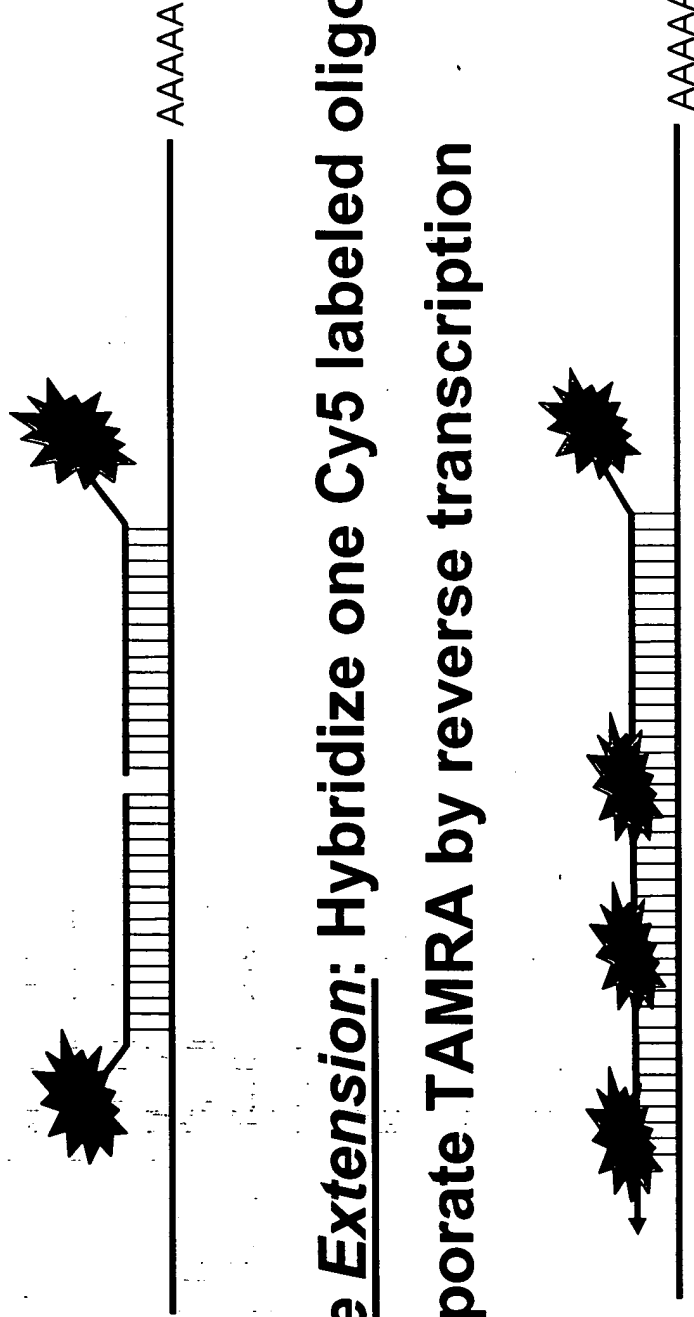


Figure 30.

Dual Probe Hybridization

- Sense vs. Antisense *E. coli* spike in total human RNA background

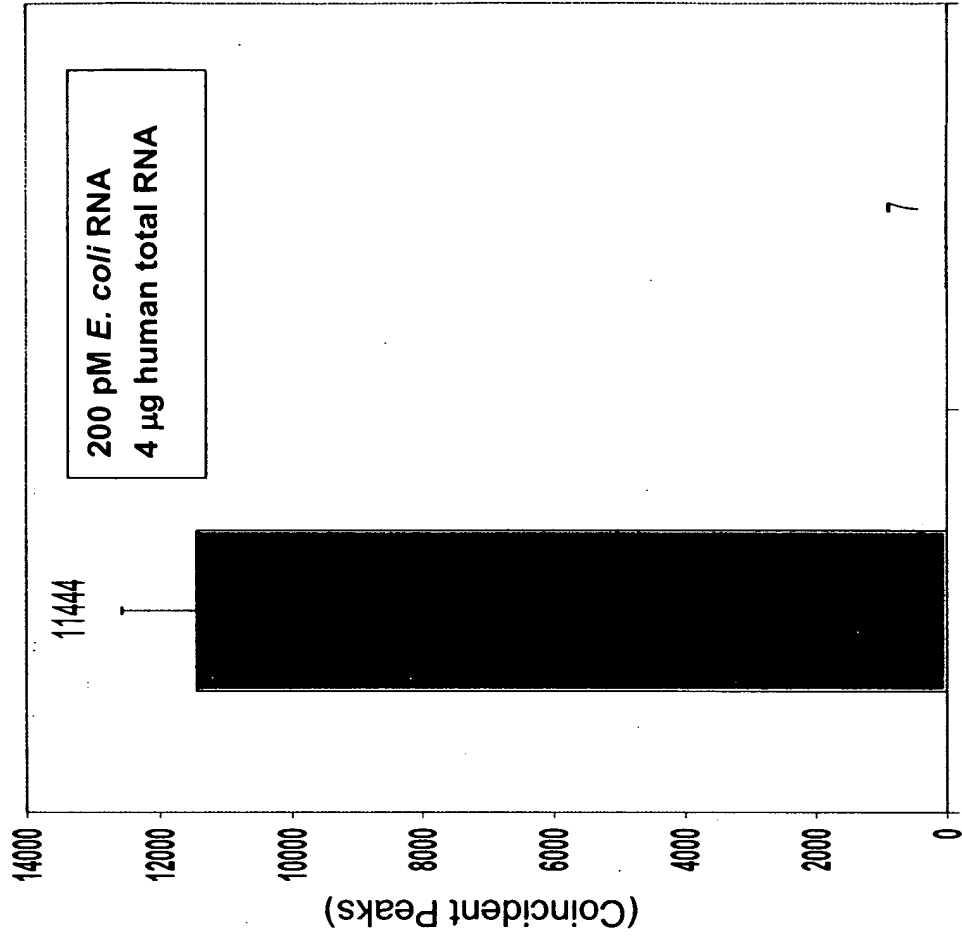
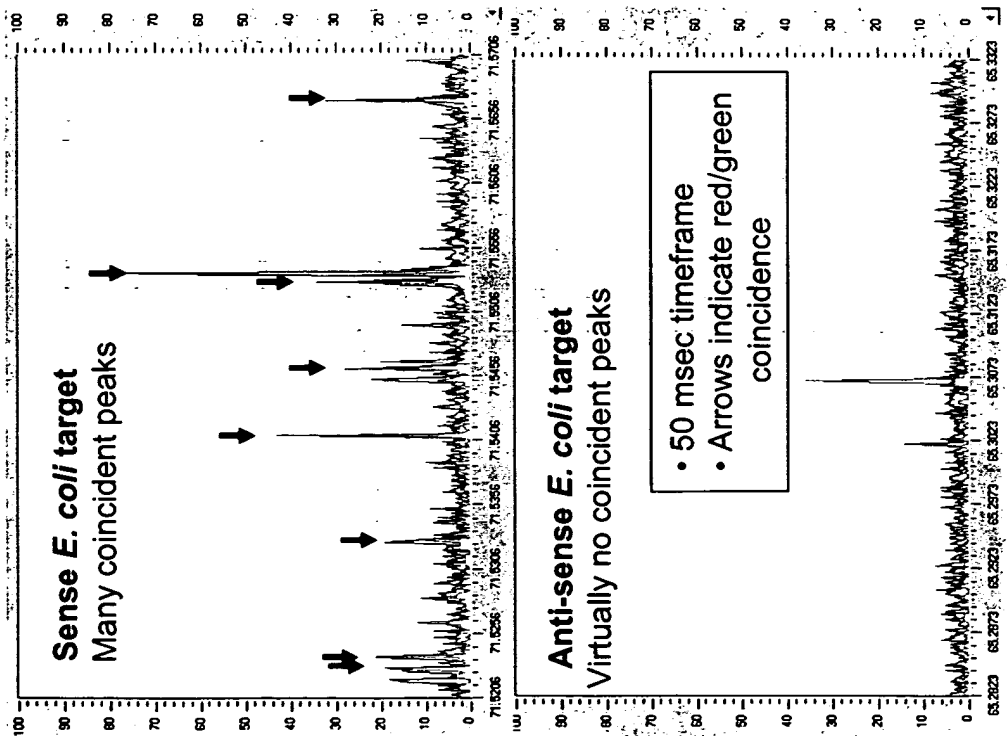


Figure 3/.

Probe Extension Assay

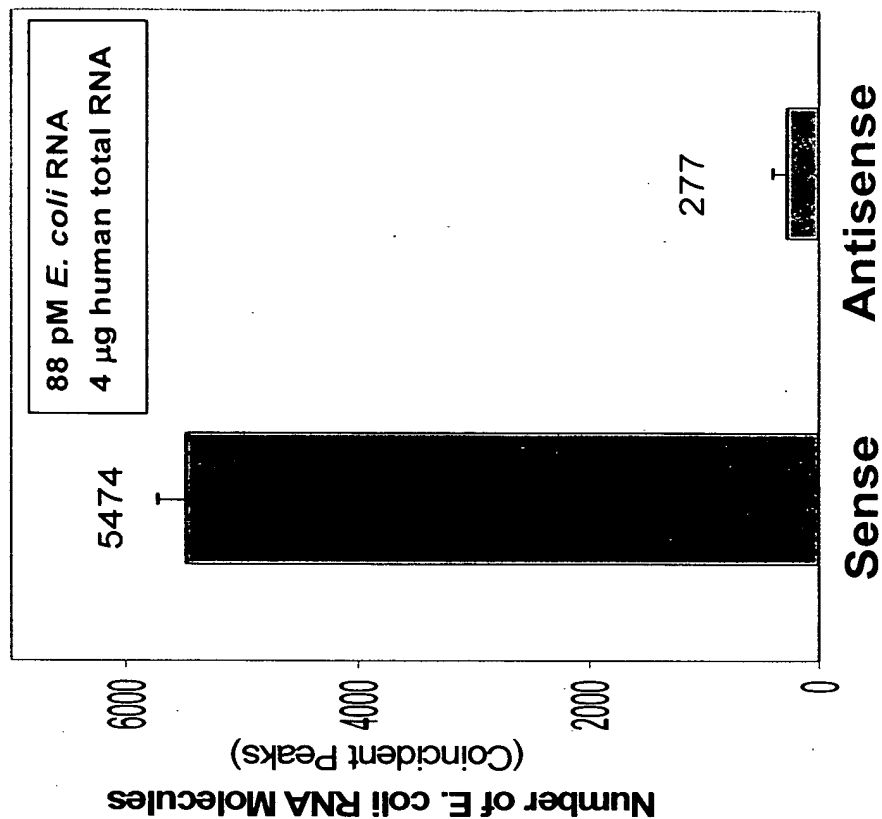
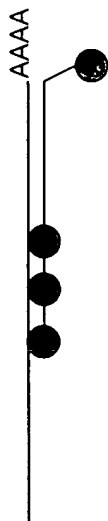
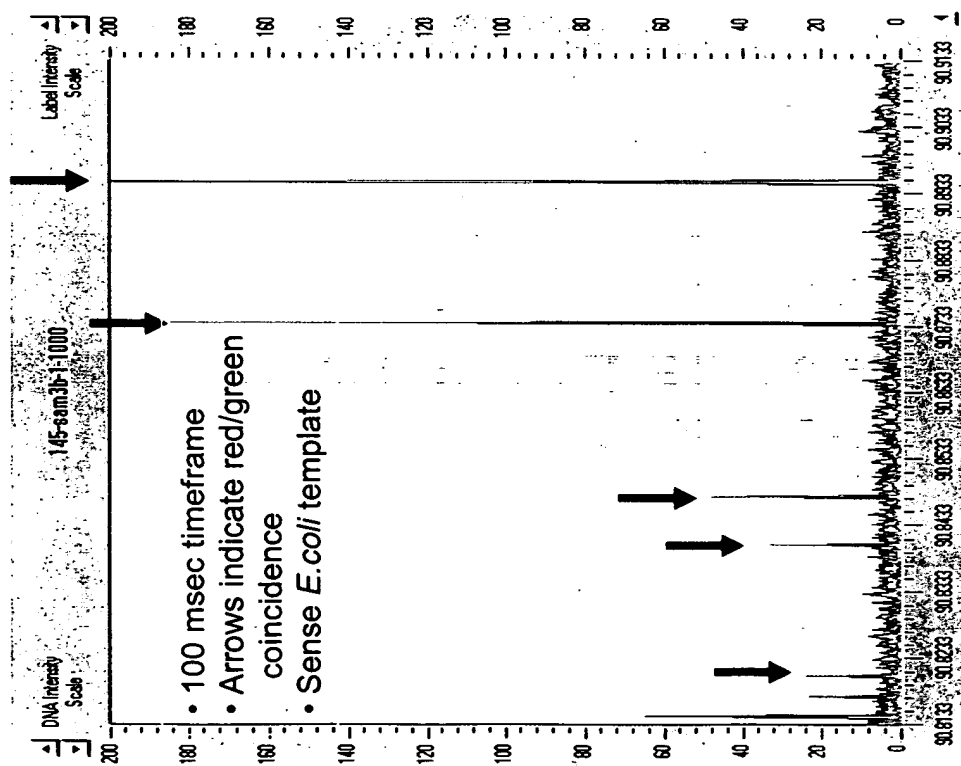


Figure 32.

E. Coli Spiked in Total RNA

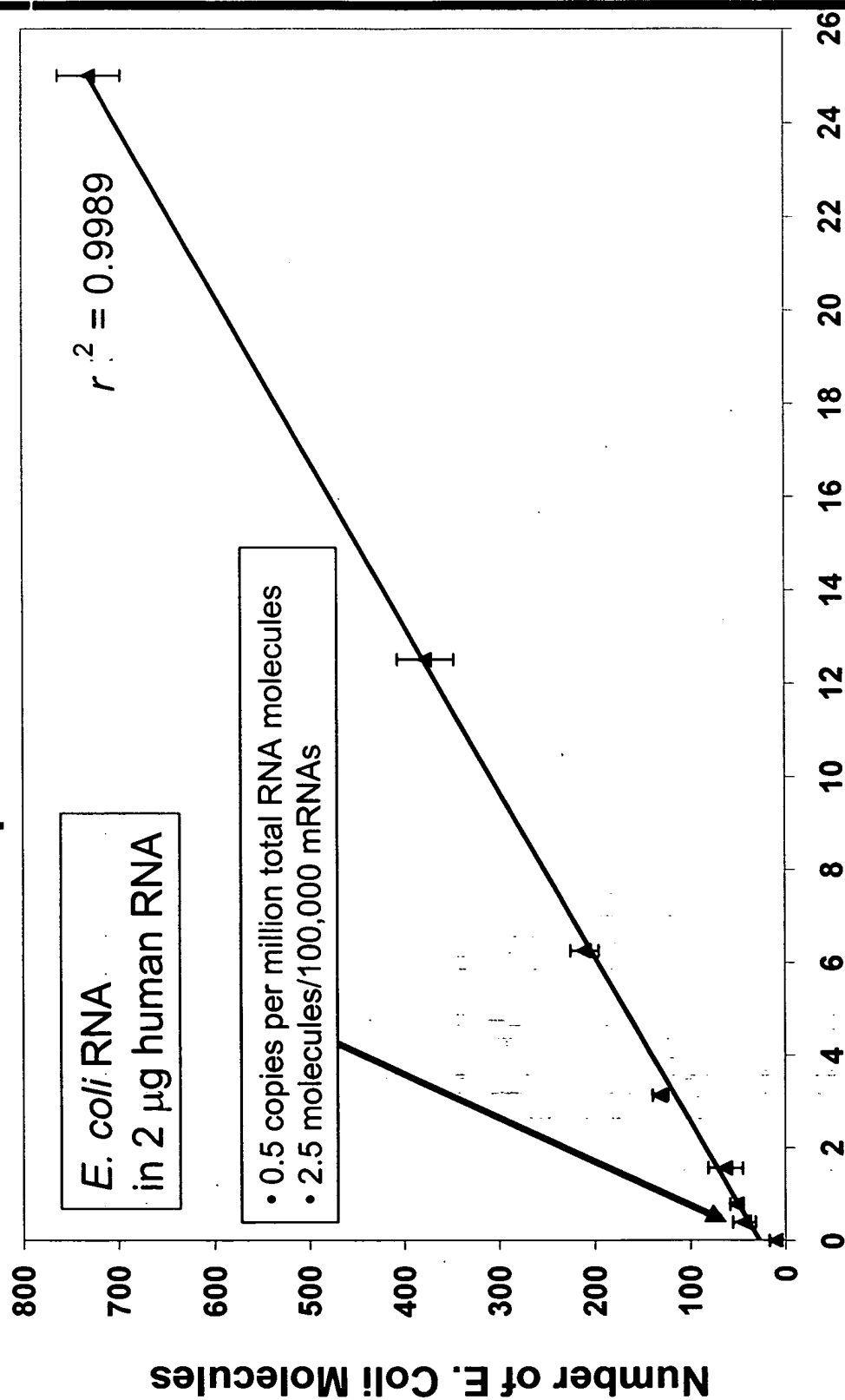


Figure 33 E. coli Spike (pM)

Lamin A/C and β -Actin Levels in Human RNA

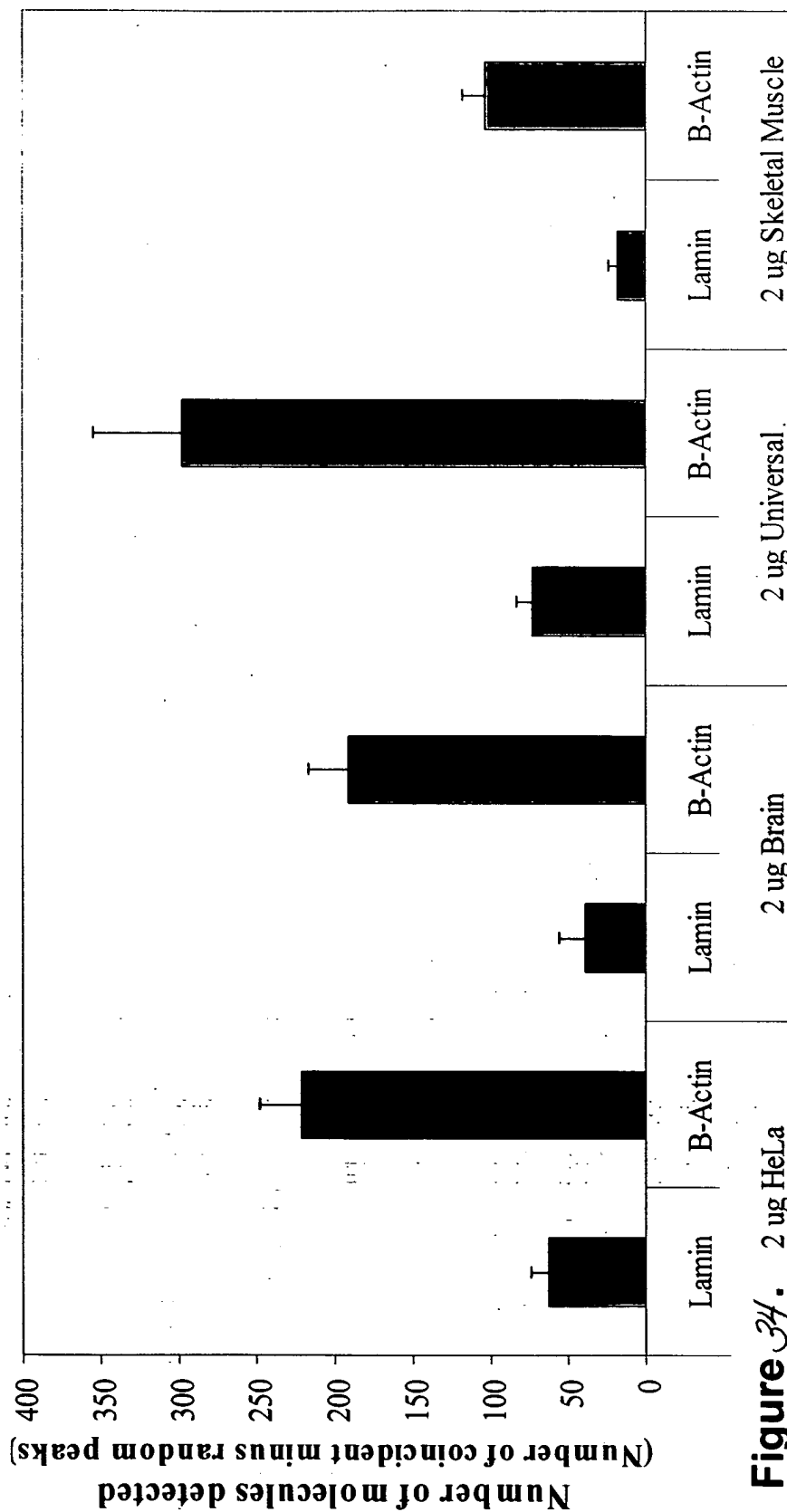
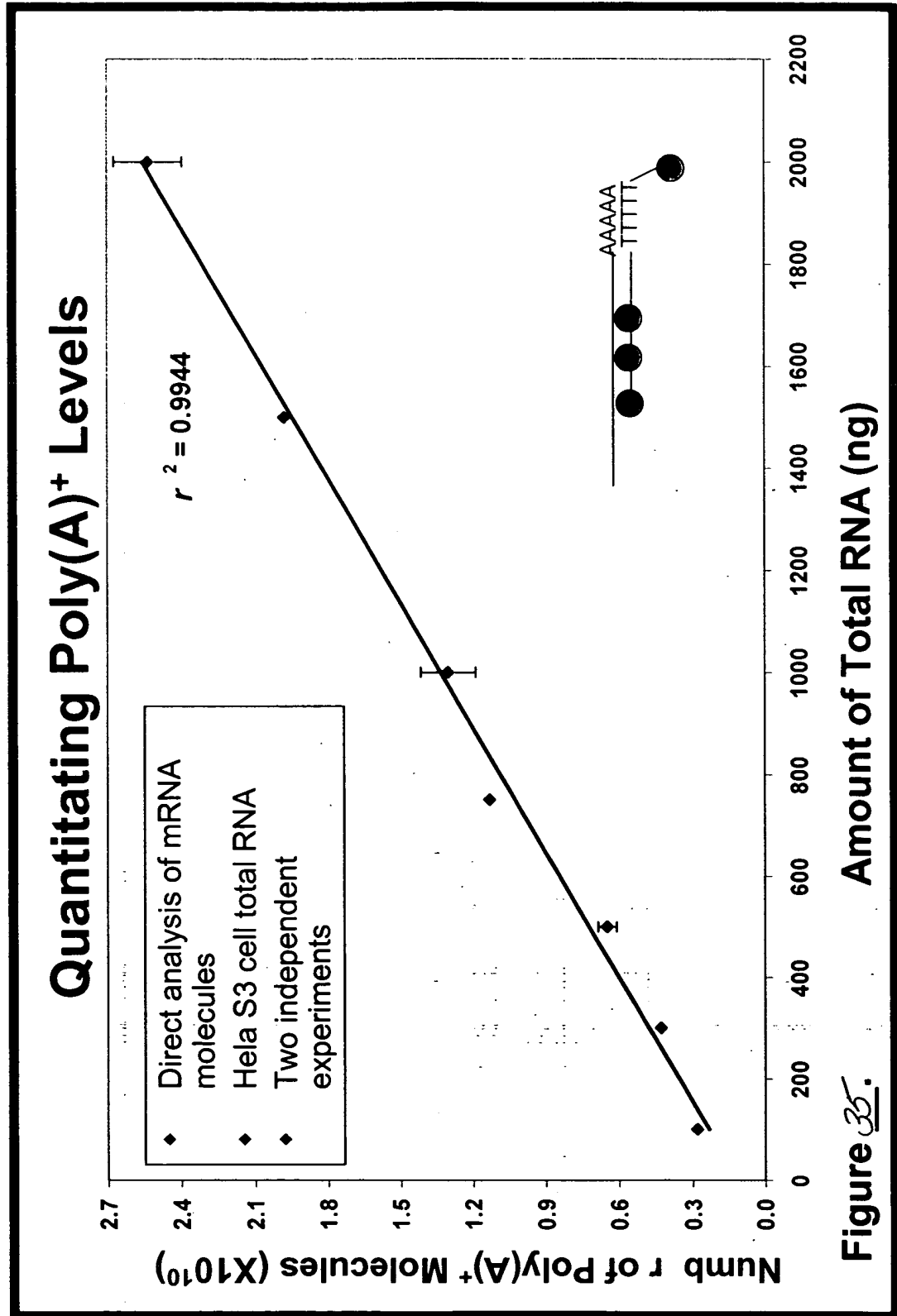
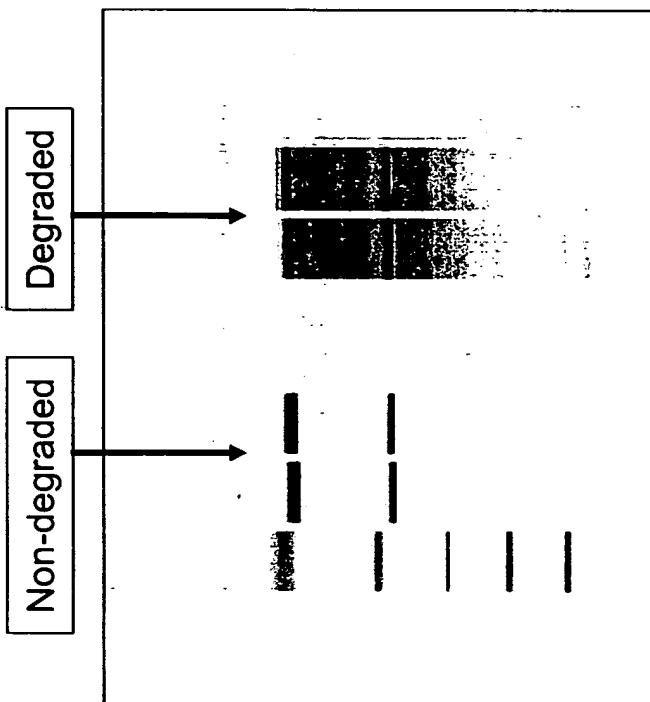


Figure 34. 2 ug HeLa



Assessing mRNA Degradation

Total RNA Samples



Ratio of Green/Red Average
Peak Areas by *DirectRNA*TM

	G/R Avg. Peak Areas	Std Dev
Non-degraded RNA	2.64	0.02
Degraded RNA	0.88	0.10
Dual-labeled 40 mer	0.79	0.02

Figure 36.

Gene X analyzed by *DirectRNA*[™] and by Real Time-PCR

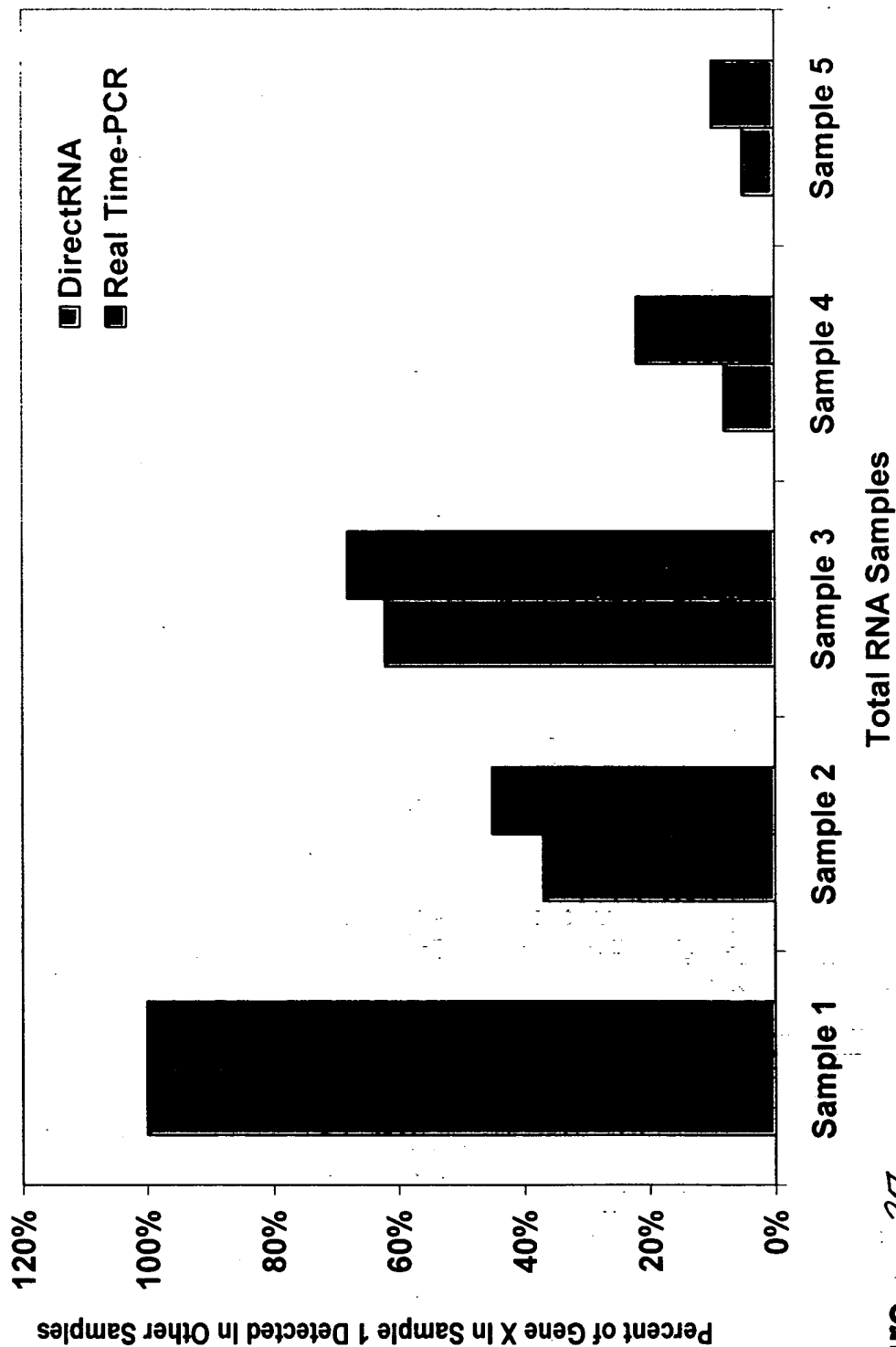
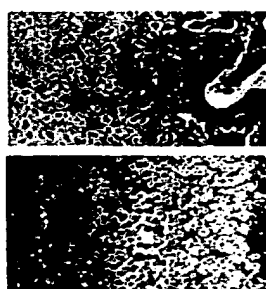


Figure 37

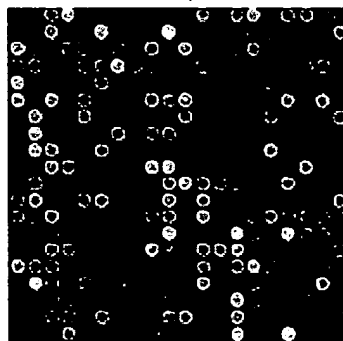
Quantitation in RNA Analysis by DirectRNA™

INPUT



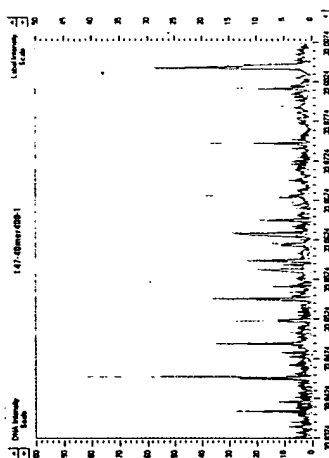
Disease Control
Sample

TOOLS & ANALYSES



Microarray
analysis

First-pass analysis
across thousands of
genes



Quantitative
Analysis
DirectRNA™

Detailed analysis of
specific genes of
interest

OUTPUT

- Disease genes
- Pathways
- Drug targets

Figure 38.

Fig. 39A

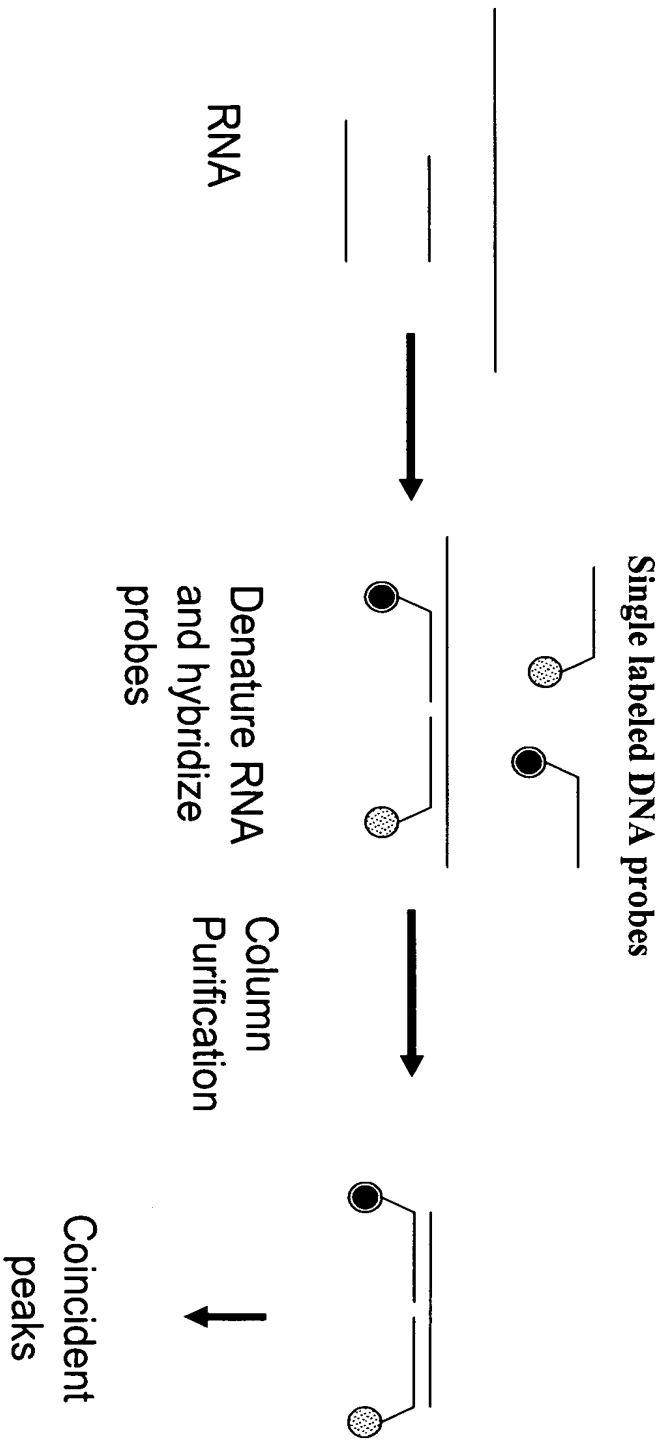


Fig. 39B

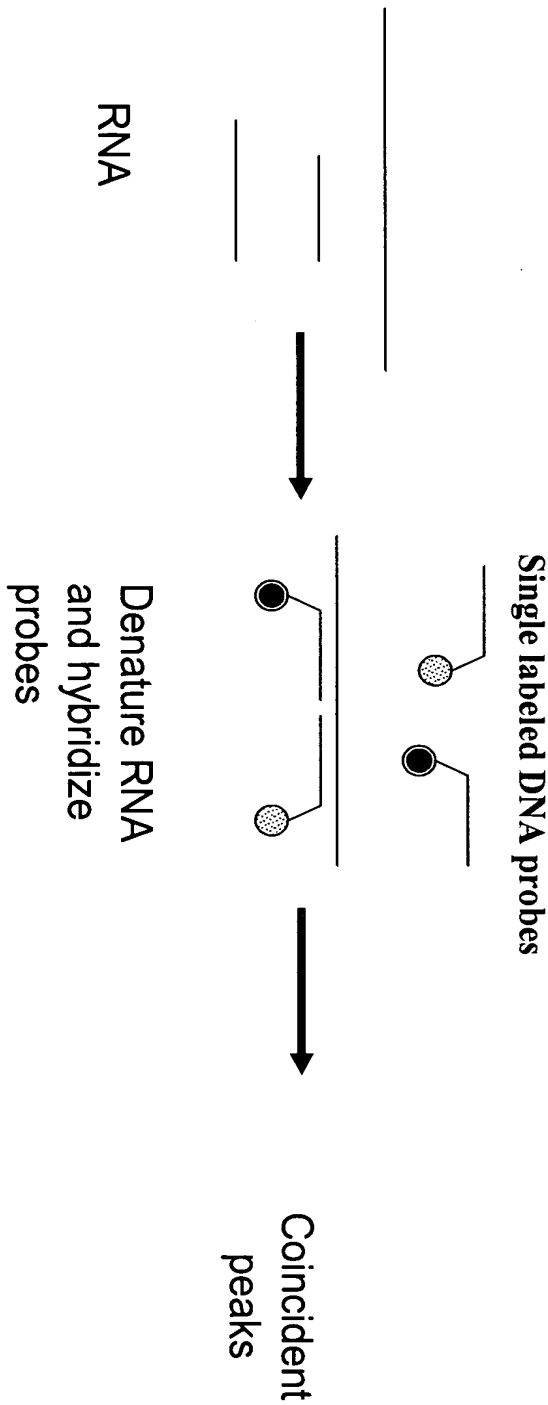


Fig. 40

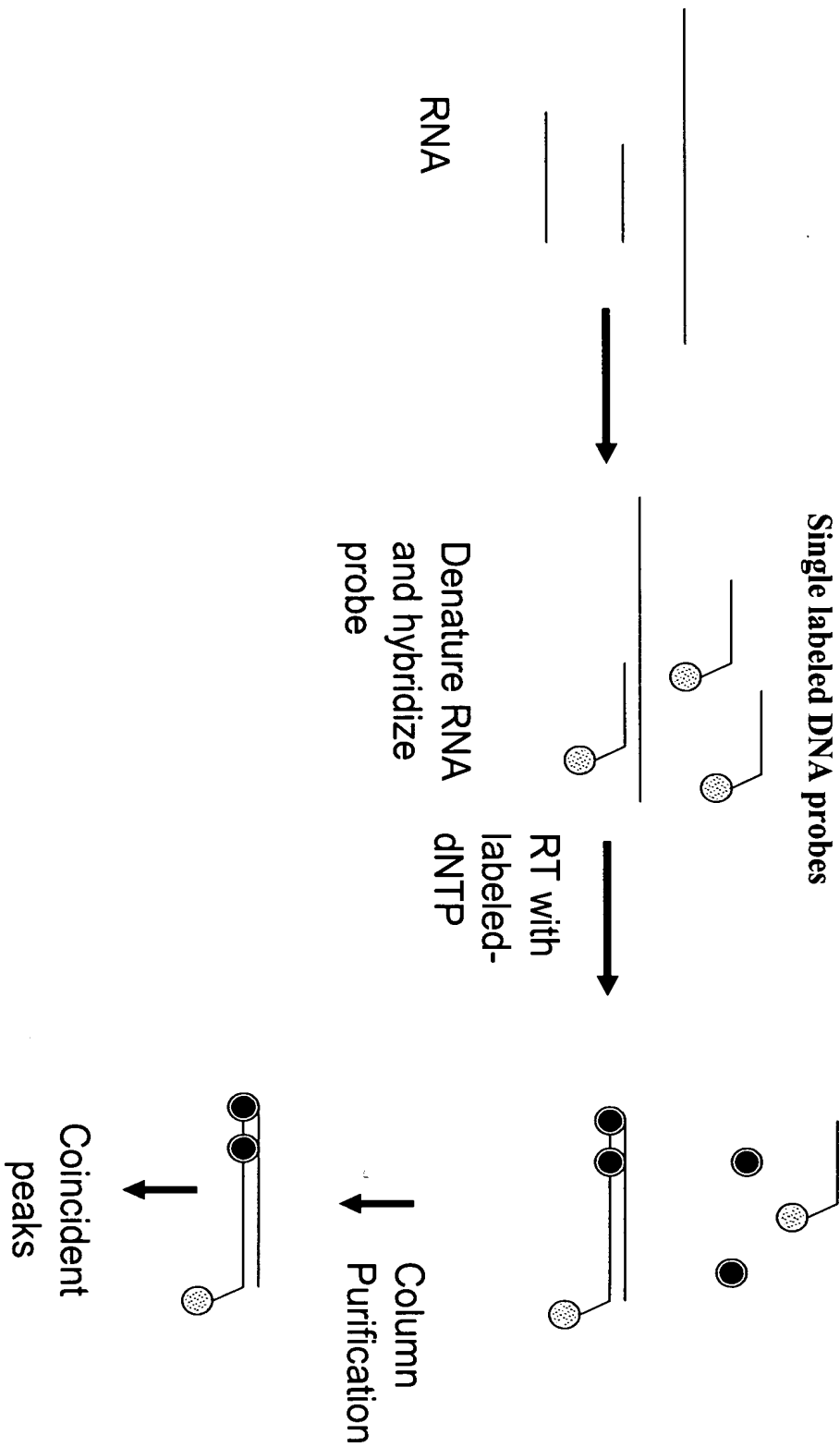


Fig. 41A

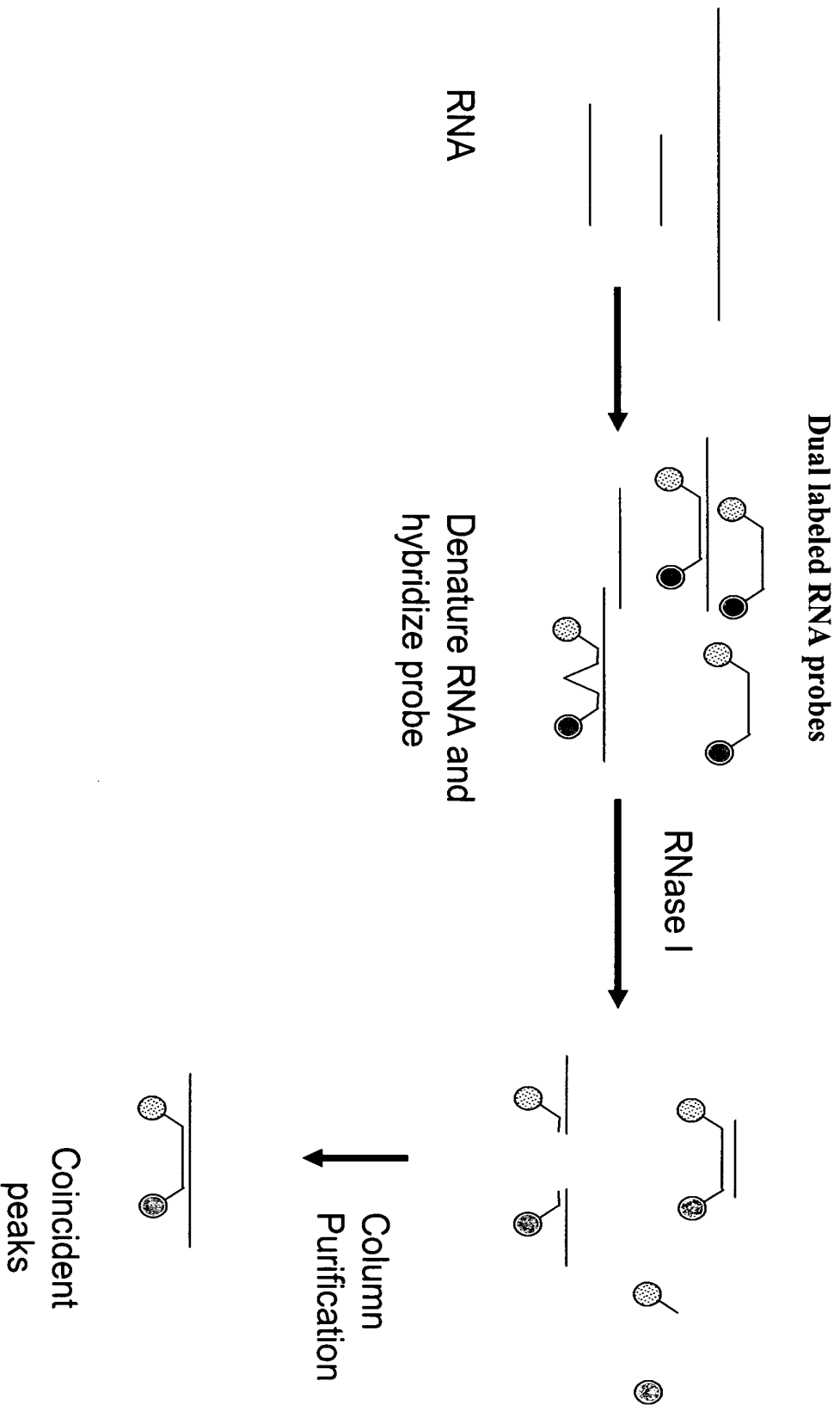


Fig. 41B

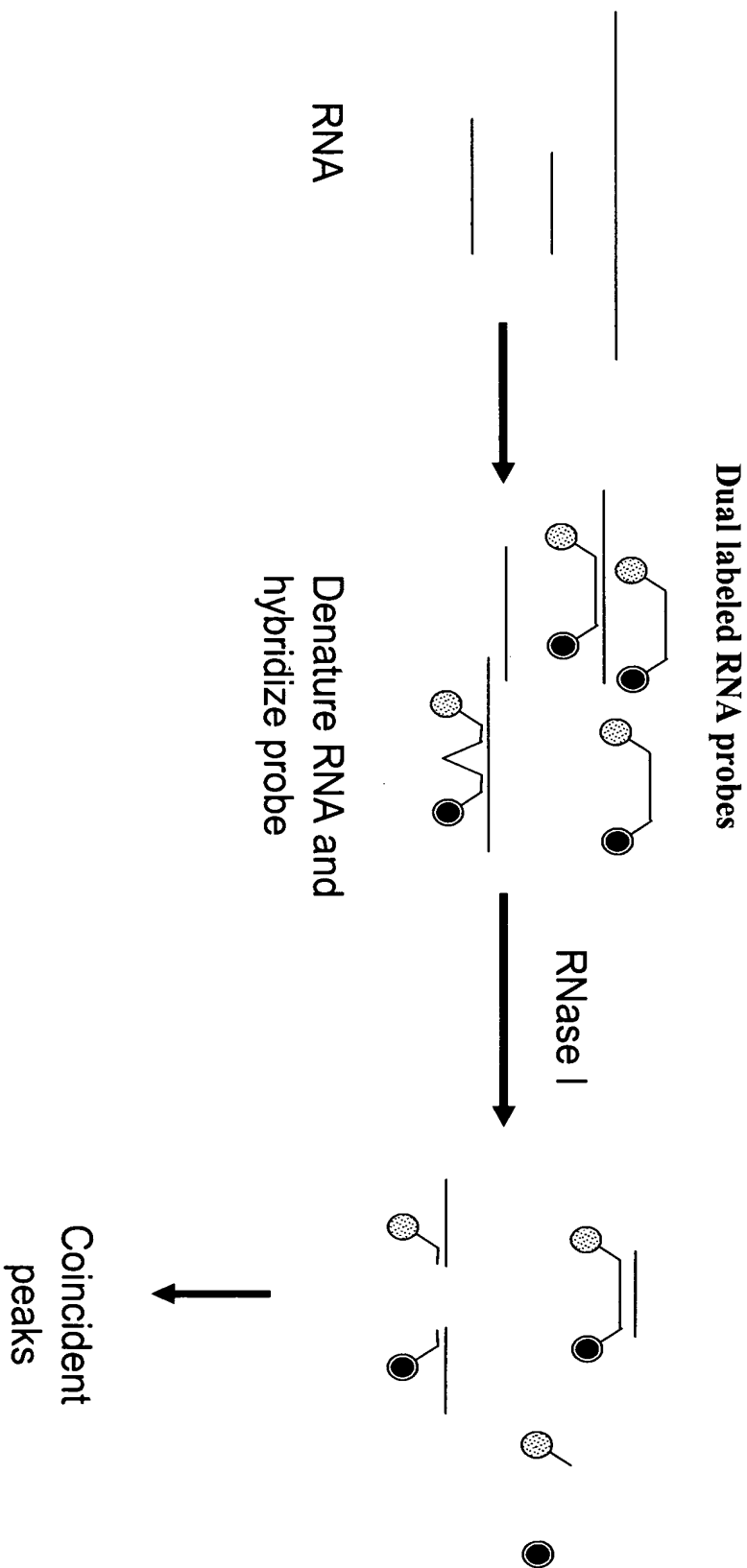


Fig. 42A

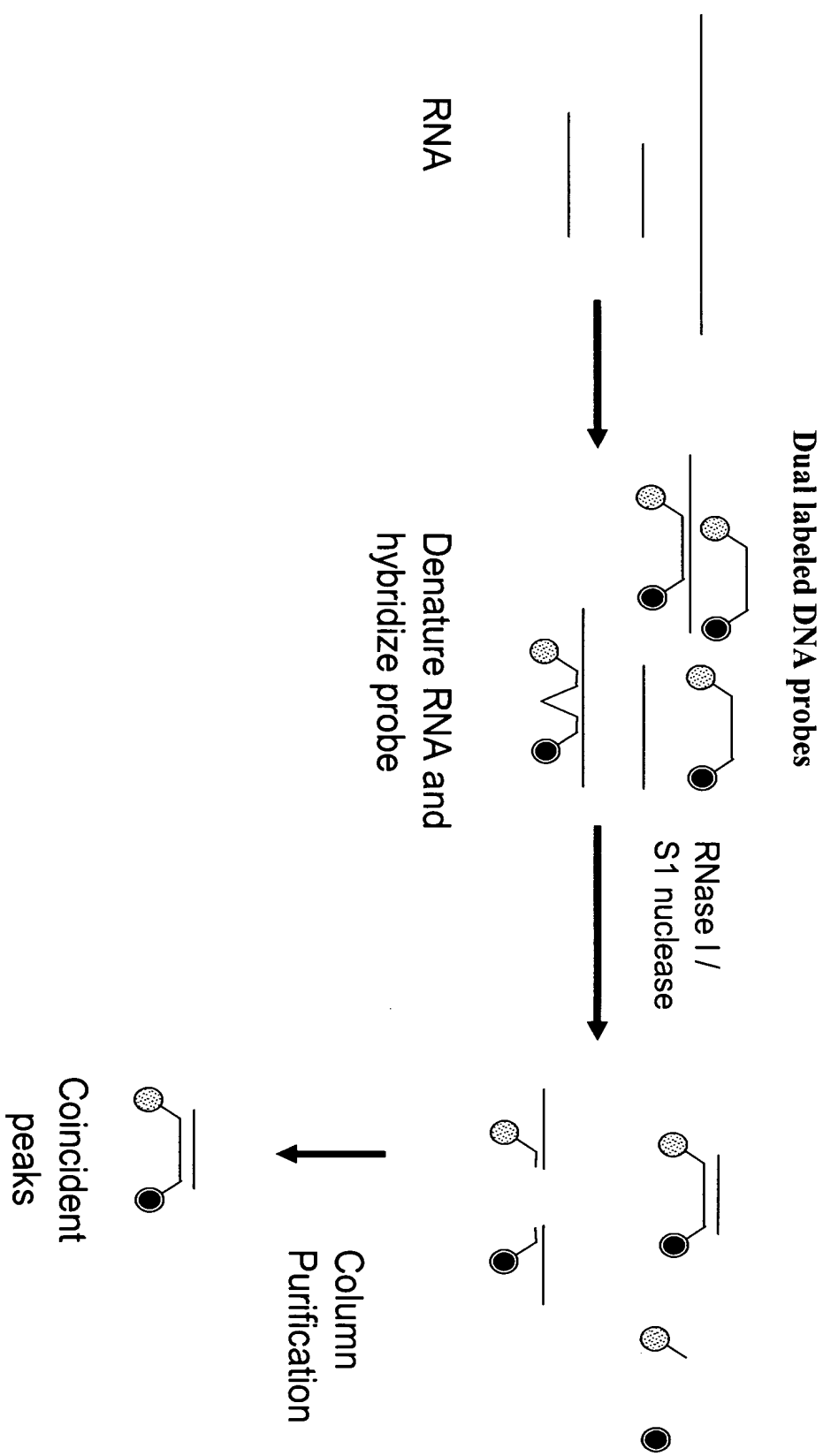


Fig. 42B

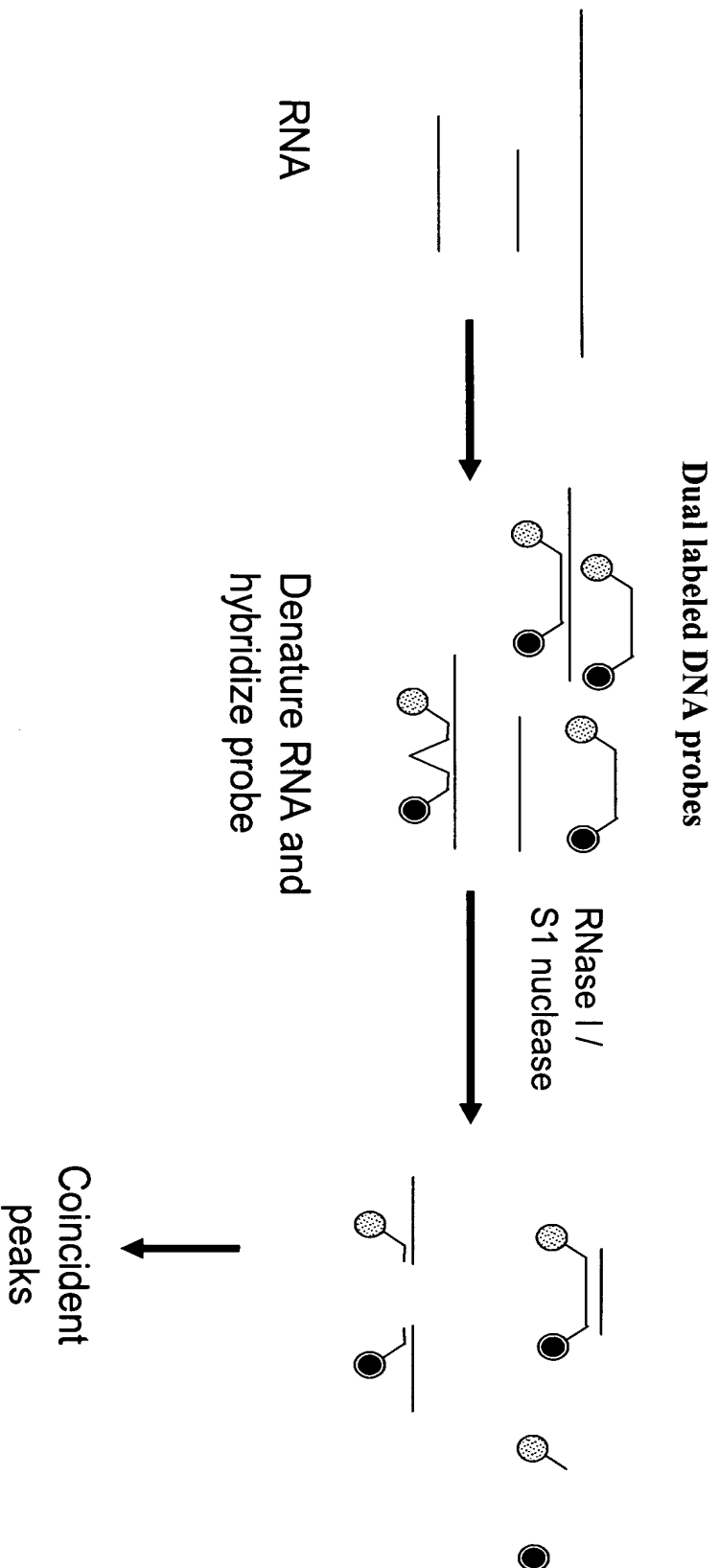


Fig. 43

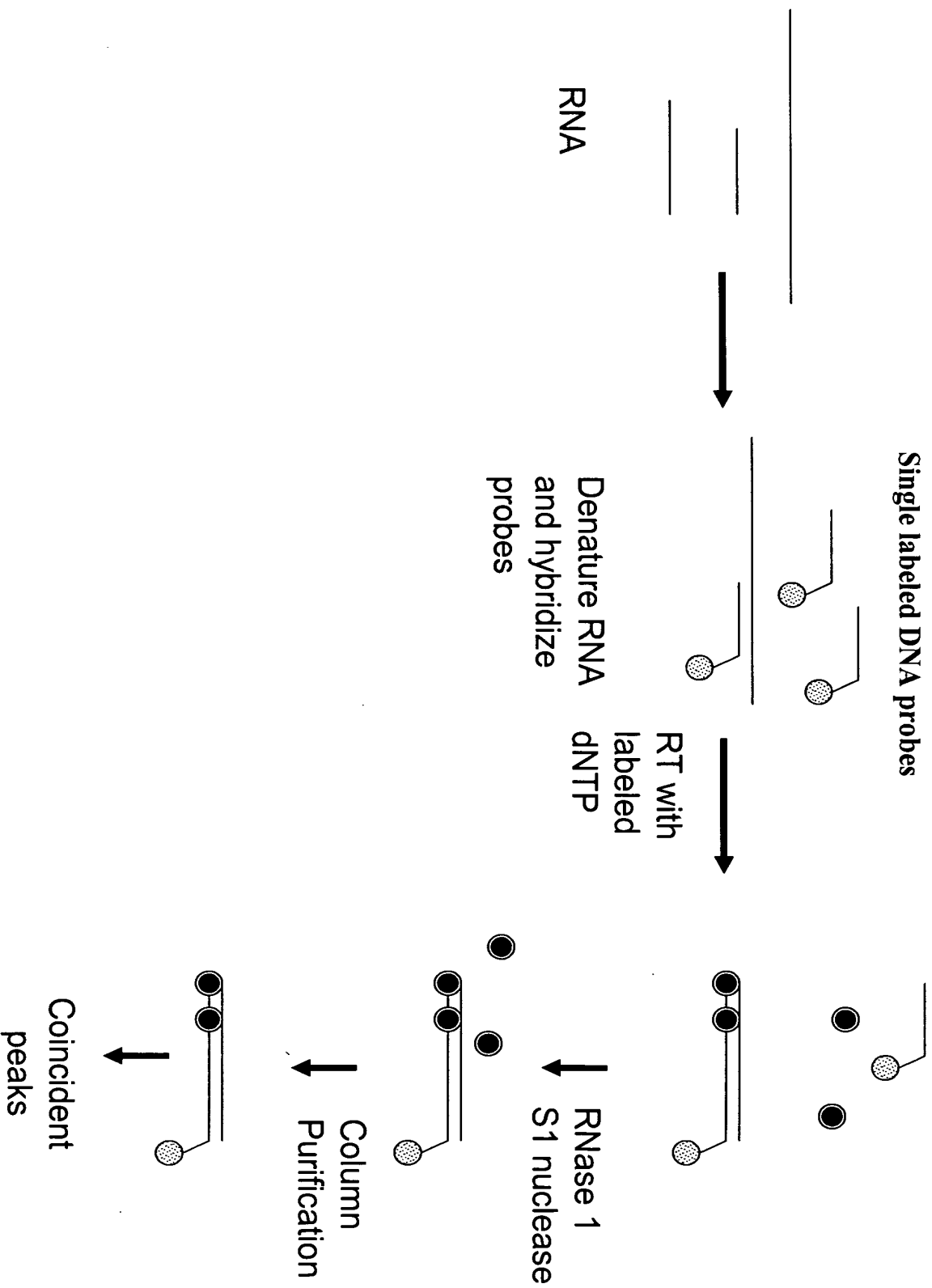


Fig. 44

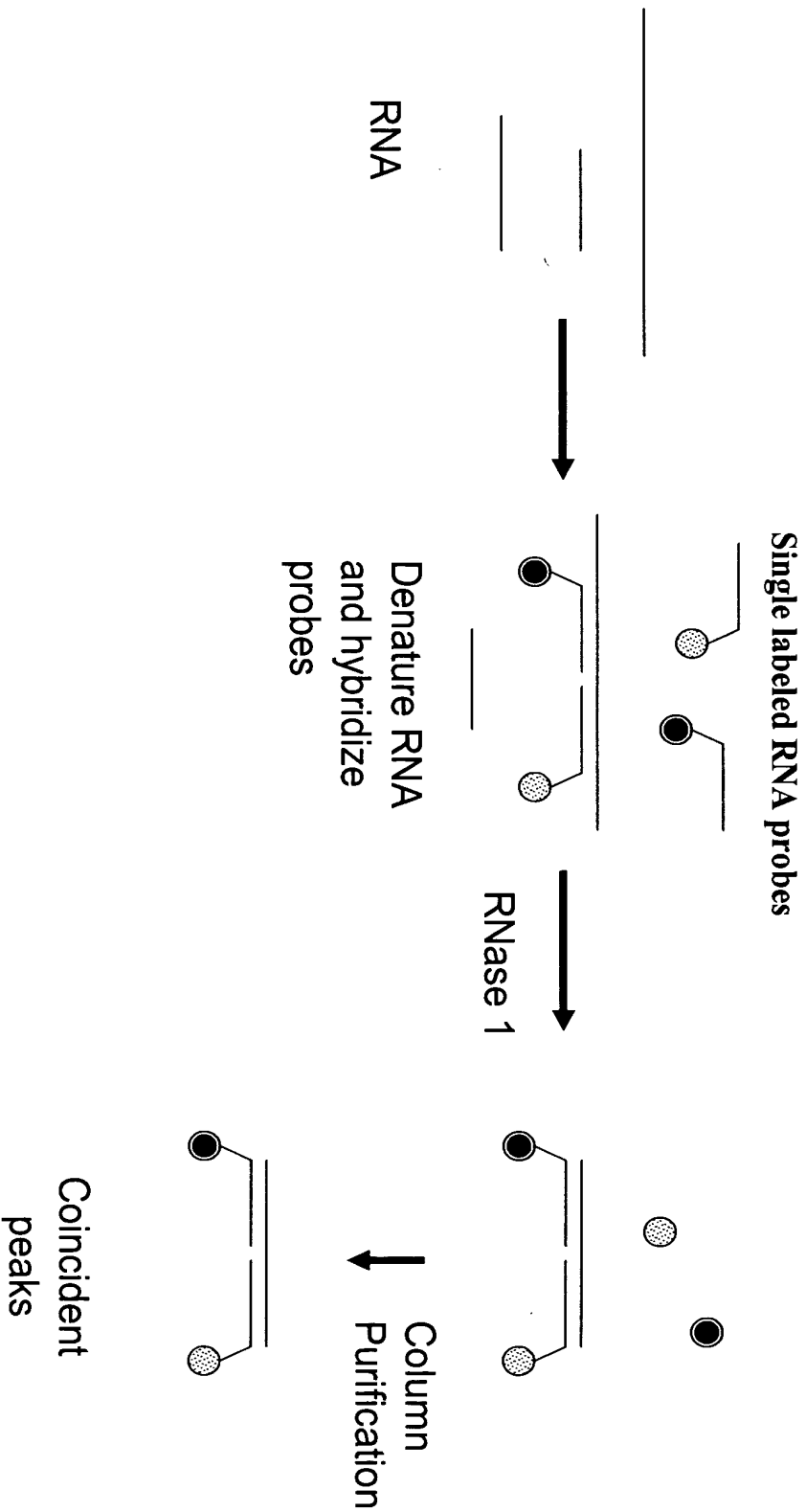


Fig. 45

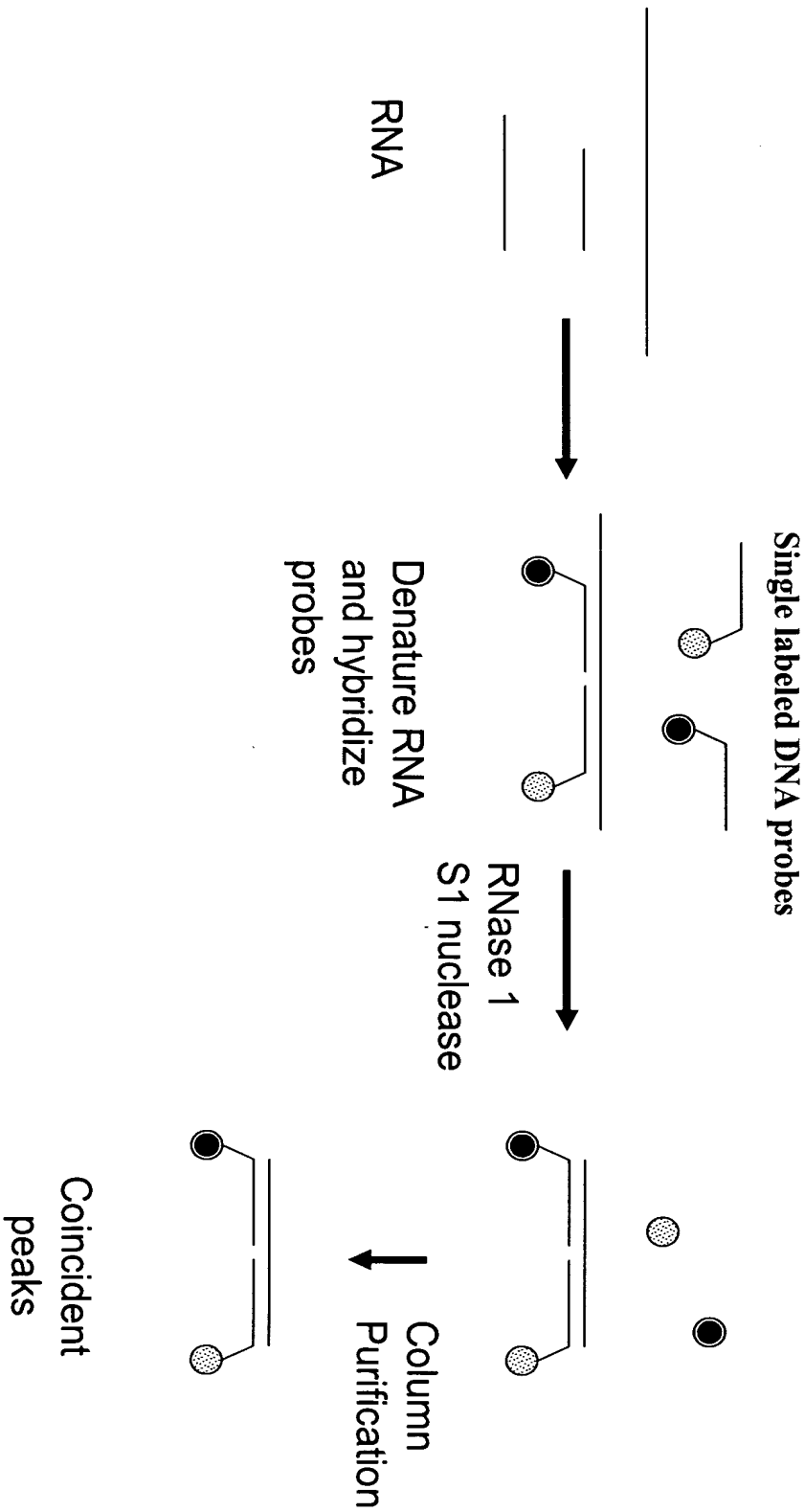


Fig. 46

Single labeled DNA probes

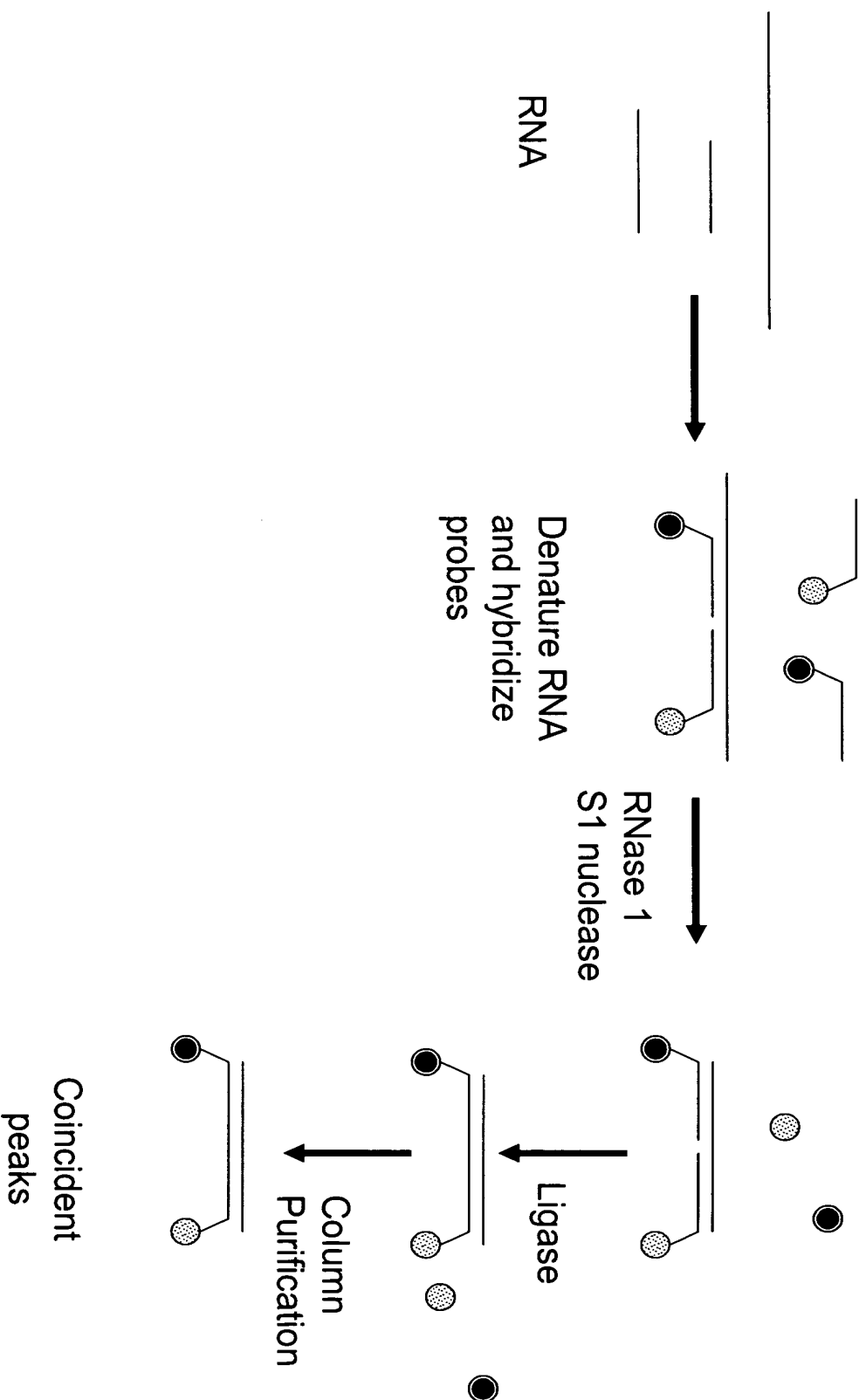
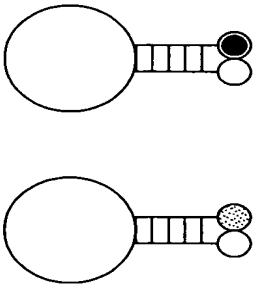


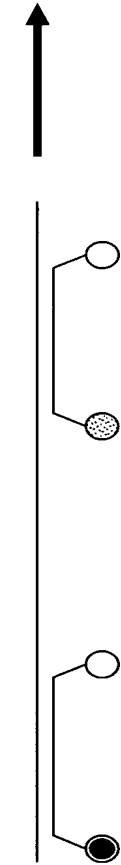
Fig. 47

Molecular beacon probes



Denature RNA
and hybridize
probes

Coincident
peaks



RNA

Fig. 48A

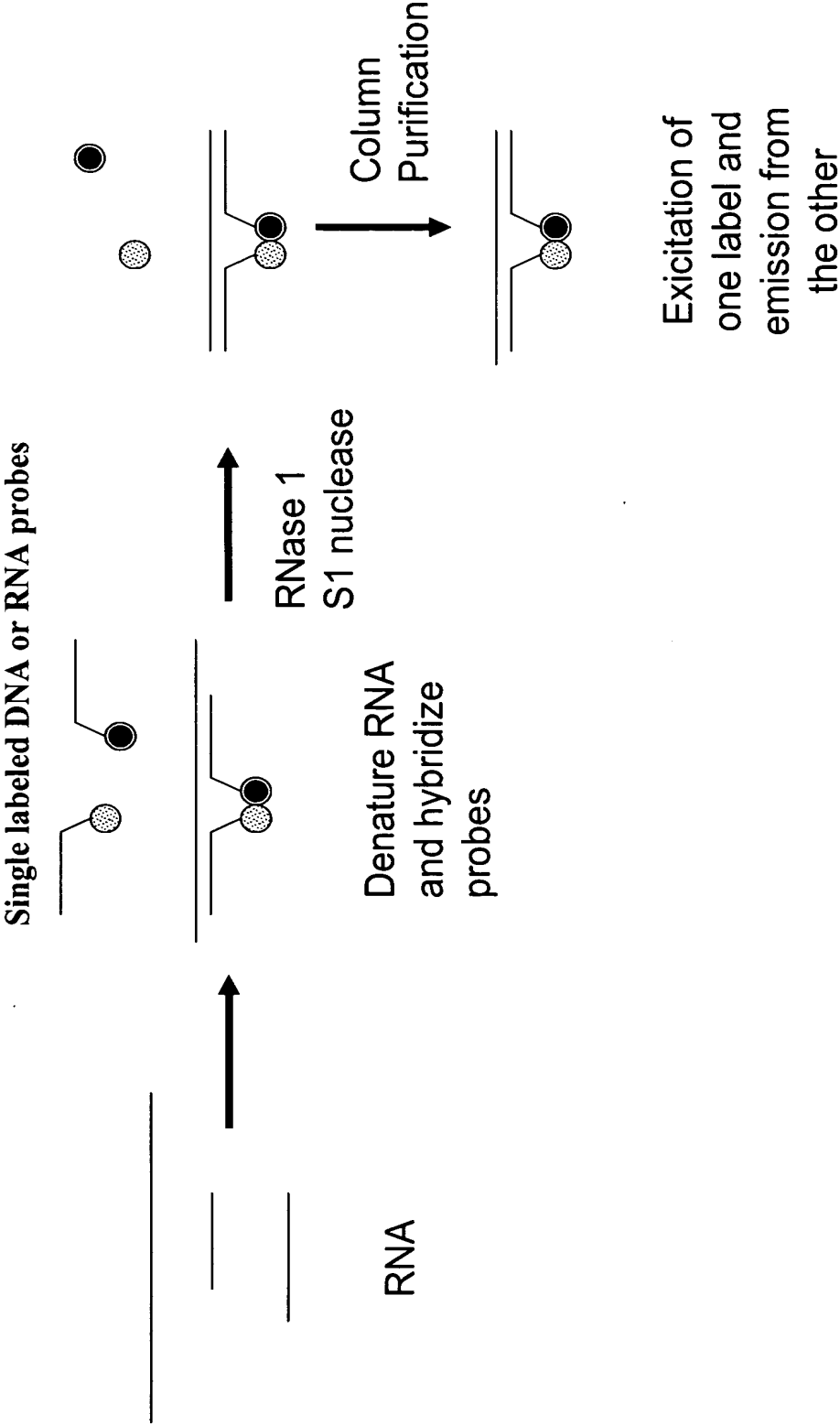


Fig. 48B

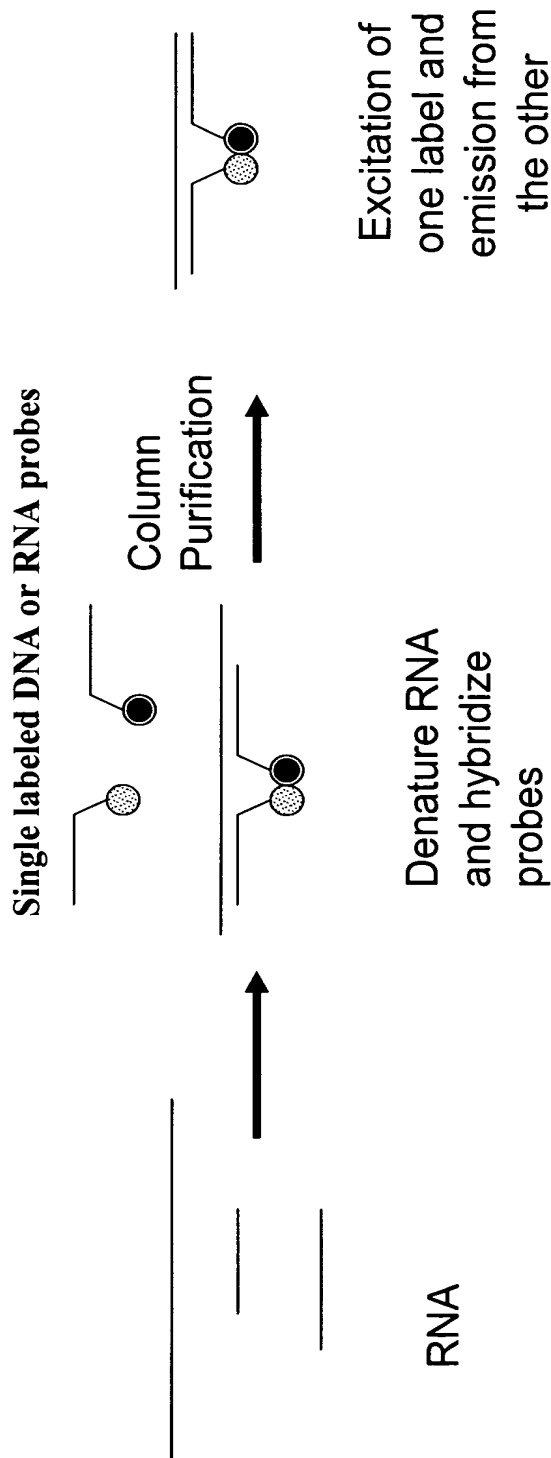


Fig. 49

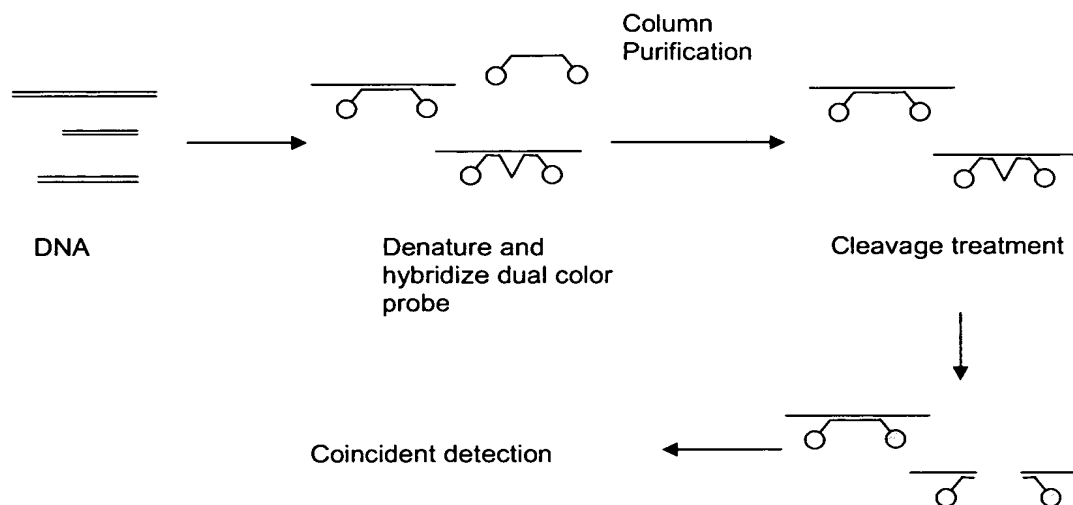


Fig. 50

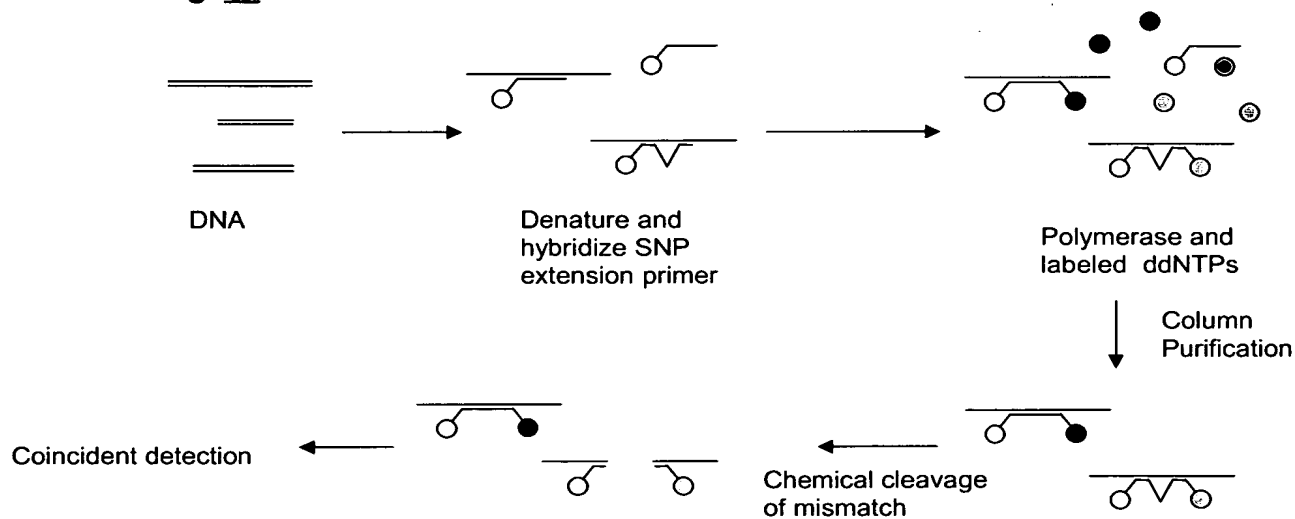


Fig. 51

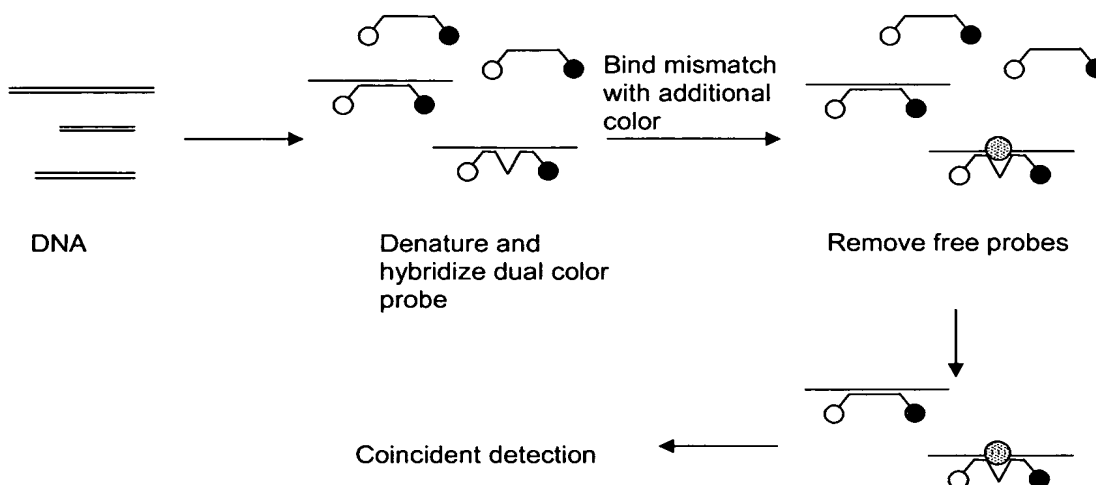


Fig. 52

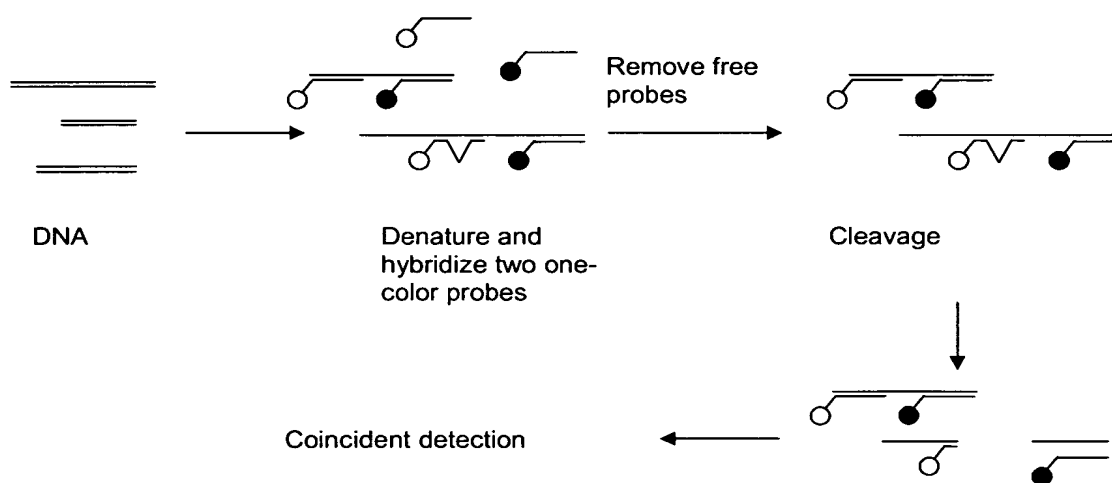


Fig. 53

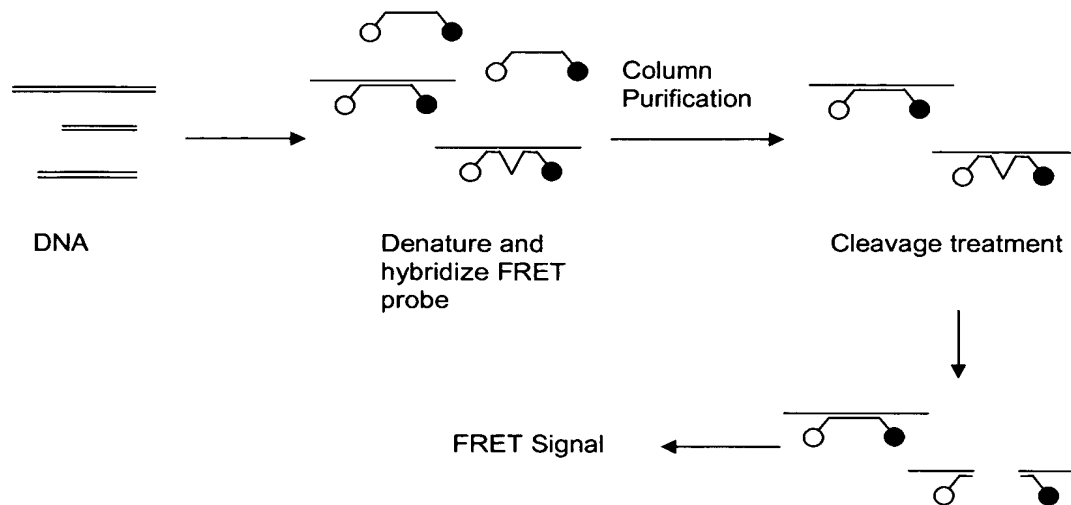


Fig. 54

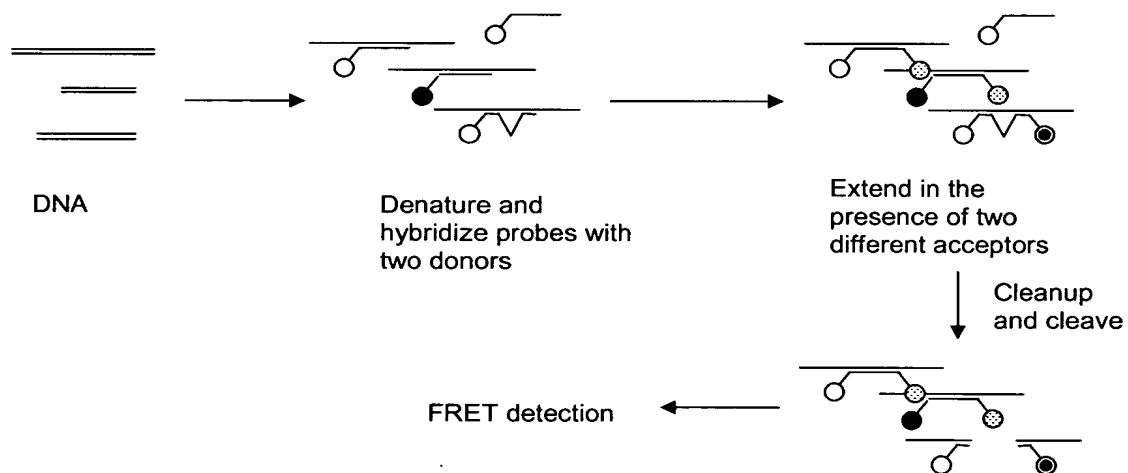


Fig. 55

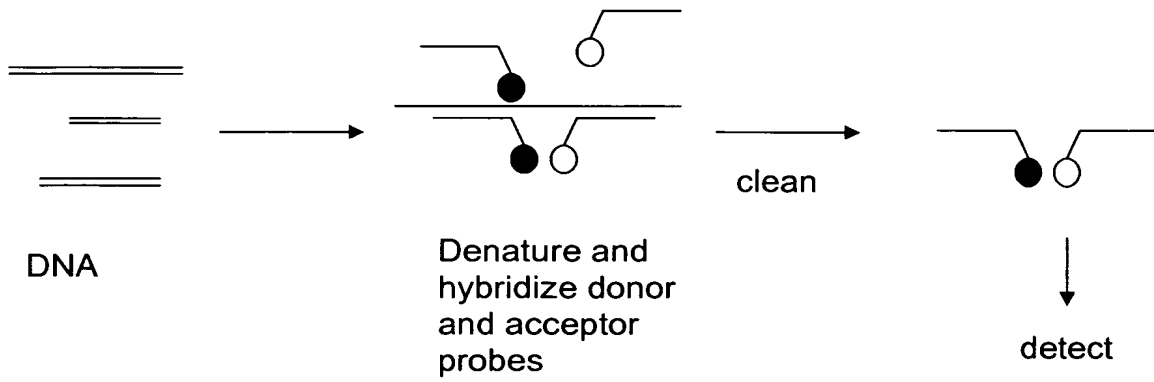


Fig. 56

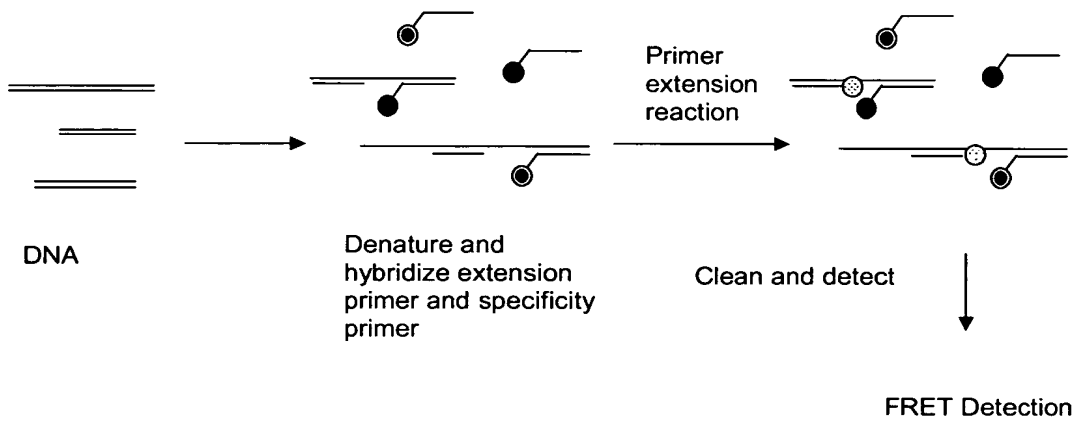


Fig. 57

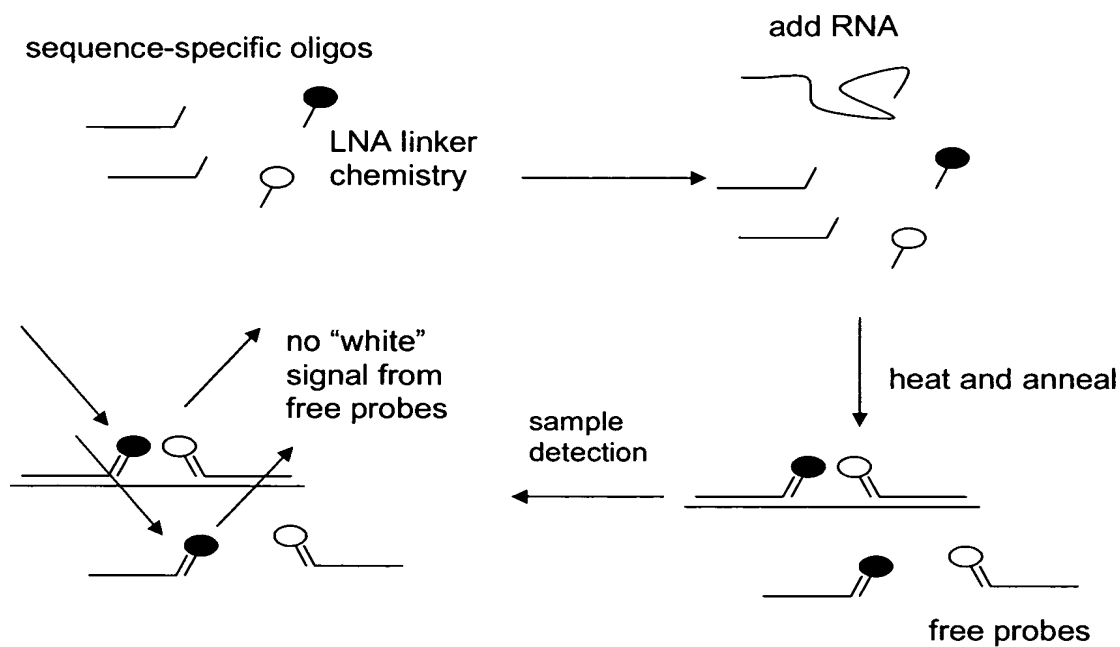


Fig. 58

Target

